BIOLOGICAL ASSESSMENT

2750 BURNSIDE ROAD [APN 073-061-018]
SONOMA COUNTY, CALIFORNIA

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1.0 INTRODUCTION

1.1 PURPOSE

This Biological Assessment (BA) was prepared in response to application for Conditional Use Permit (CUP) to the County of Sonoma Planning & Resources Management Department (PRMD), order to evaluate the potential for special-status species (SSS) listed in Appendix A and/or their habitats to exist on the above-referenced property, as well as address the predicted impacts on SSS and their habitats as a result of development activities onsite including installation of a commercial outdoor *Cannabis* cultivation facility, pursuant to applicable regulations from County of Sonoma and the State of California. This BA also analyzes the potential for jurisdictional wetlands and other waters of the State to exist onsite or in proximity to the proposed development areas, and classifies landforms that may potentially convey sediment to waters of the State including dry creeks, washes, swales, gullys, and other erosional features. Also included is a set of Best Management Practices (BMPs) that are adapted from a variety of sources including State Water Resources Control Board (SWRCB) *Cannabis* General Order No. WQ 2019-0001-DWQ and other state and local ordinances.

Two previous versions of this BA dated February 15, 2021 and September 18, 2021 were prepared prior to the preparation of engineered grading plans and tree removal and should not be used going forward. The current version of this BA contains all plants identified onsite across two appropriately-timed site visits, an estimation of the number and species of trees removed based on the July 2023 site visit, analysis of impacts from installation of the commercial *Cannabis* cultivation facility as shown in the engineered drawings prepared by Adobe Associates Inc. and dated April 23, 2021, and recommendations for mitigation.

1.2 LOCATION

1.2.1 Site Overview

The project site is located at 2750 Burnside Road in unincorporated Sonoma County, 3.3 miles southwest of the town of Sebastopol (Figure 1). The property is comprised of a single parcel designated Assessor's Parcel Number (APN) 073-061-018, is deeded 10.88 acres, and is zoned Diverse Agricultural 10-acre minimum (DA10). The parcel is located in Section 8 in Township 6 North, Range 9 West, on the USGS Two Rock 7.5-minute quadrangle (Figure 2). The approximate latitude and longitude of the centroid of the parcel is 38.3718 (N), -122.8738 (W).

The parcel is under the jurisdiction of the North Coast Regional Water Quality Control Board (RWQCB), and the Northern Region (District 1) of the California Department of Fish & Wildlife (CDFW), and is not located in a medium- or high-priority groundwater basin as designated by the California Department of Water Resources (DWR). The parcel is not located in County-designated Biotic Habitat (BH) or Valley Oak Habitat (VOH) although it does overlap with County-designated Riparian Corridor (RC) zones.

1.2.2 Federal Critical Habitat

Federal Critical Habitat (FCH) is designated by the U.S. Fish & Wildlife Service (USFWS) and provides special protections for habitats considered important for long-term population persistence of endangered or threatened species. There is no FCH onsite for any animal or plant species (Appendix E). The nearest Federal Critical Habitat is located 0.9 miles northwest and 0.9 miles southeast of the parcel for Chinook salmon (*Oncorhynchus tshawytscha*) in several unnamed tributaries of Atascadero Creek. The next nearest FCH is located 3.5 miles northeast and southeast of the project parcel for California tiger salamander (*Ambystoma californiense*; CTS) in the Santa Rosa Plain. There is no other Federal Critical Habitat within 5 miles of the project parcel.

1.2.3 Special-Status Species Occurrences

Special-status species (SSS) are those species that receive special protections under either local, State, or Federal law and include both State and Federally Endangered and Threatened species of animals and plants, as well as candidate listing species and other species or populations of special concern for which additional information is required. The California Natural Diversity Database (CNDDB) provides information on most known SSS occurrences in the State of California. A description of the habitat requirements and likelihood of occurrence of potential SSS on the project parcel based the CNDDB database, published scientific literature, and the expertise of PEC staff, is provided in Appendix A, with a description of the nearest locality of all SSS known from within a 5 mile radius around the project parcel. Additionally, map-based representation of all of the SSS within an approximately 5 mile radius around the project site is provided in Appendices C & D.

1.2.3.1 SSS Animals

All of the known special-status animal species from within 5 miles of the project parcel are highlighted in Appendix A. There are a total of 19 special-status animal species known from within 5 miles of the project parcel. There is one CNDDB polygon that overlaps with the project parcel, a non-distinct locality of California red-legged frog (*Rana draytonii*; CRLF) located somewhere in the USGS Two Rock 7.5 minute quadrangle, that includes the project parcel. The nearest known occurrence of special-status animal species is California freshwater shrimp (*Syncaris pacifica*) located 0.7 miles southwest of the project parcel near Bevans Creek. The next nearest known occurrences of special-status animal species are Foothill yellow-legged frog (*Rana boylii*; FYLF), California giant salamander (*Dicamptodon ensatus*), Western bumblebee (*Bombus occidentalis*), and American badger (*Taxidea taxus*) located approximately 1.1 to 1.5 miles west of the project parcel centered on the town of Freestone, although many of these are old occurrences and the exact location is not known with any precision.

There are also occurrences of Oregon floater (*Anodonta oregonensis*), California floater (*Anodonta californiensis*), Sonoma tree vole (*Arborimus pomo*), Foothill yellow-legged frog (*Rana boylii*; FYLF), and Western bumblebee (*Bombus occidentalis*) in and around Salmon Creek, that runs through the town of Freestone, also located approximately 1.5 miles west of the project parcel. The next nearest known occurrence of special-status animal species is Western pond turtle (*Emys marmorata*) located approximately 1.3 miles northwest of the project parcel near Bodega Highway. There are no other known occurrences of special-status animal species within 2 miles of the project parcel.

1.2.3.2 SSS Plants

All of the known special-status plant species from within 5 miles of the project parcel are highlighted in Appendix A. There are a total of 29 special-status plant species known from within 5 miles of the project parcel. There is one CNDDB polygon that overlaps with the project parcel, a non-distinct locality of Pitkin Marsh lily (*Lilium pardalinum* ssp. *pitkinense*) observed somewhere in the USGS Two Rock 7.5 minute quad (Appendix C), that includes the project parcel. The next nearest known occurrence of special-status plant species is Two fork clover (*Trifolium amoenum*) located 1.6 miles west of the project parcel near Freestone. There are no other known occurrences of special-status plant species within 2 miles of the project parcel.

1.2.4 Landforms & Topography

The maximum elevation of the parcel is 500 feet above sea level at the northeast corner of the parcel, and the minimum elevation is 308 feet above sea level near the northwest corner of the parcel where the unnamed Class I watercourse exits the parcel (Figure 2). The topography of the parcel is gently sloped to moderately sloped, with grades between 10% and 30%, as measured by Suunto PM5 handheld clinometer (Figure 2). Water onsite flows generally towards the west and collects into a densely vegetated streamchannel that is Class I, with several Class II spurs extending towards the east (Figure 8). There is also a small isolated spring with wetland vegetation in the center-south of the parcel (Figure 10). Water leaving the site flows north in the unnamed Class I watercourse for approximately 3.0 miles before the confluence with Atascadero Creek, that flows north for approximately 3.5 miles before the confluence with Green Valley Creek, that then flows west and north for approximately 10 more miles before the confluence with the Russian River at Guerneville. From there the Russian River continues west for approximately 20 miles west before emptying into the Pacific Ocean near Jenner. See §2.4 for additional discussion of wetlands and watercourses onsite.

1.3 METHODS

1.3.1 Records Search & Literature Review

Based on a review of the literature and relevant databases, we compiled a list of special-status plant and animal species that are known to occur within Sonoma County, or that occupy habitats that are known to be present on or near the project site (Appendices A & C). Sources of information referenced include the California Department of Fish & Wildlife (CDFW) *California Natural Diversity Database* (CNDDB 2021), U.S. Fish and Wildlife Service Environmental Conservation Online System (USFWS 2021), the California Native Plants Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2021), the CDFW *Habitat Relationships System* (HRS), and the knowledge of PEC staff familiar with the species and habitats of Sonoma County. Additional information on sensitive habitats including wetlands was obtained from the USFWS National Wetlands Inventory (NWI 2021), and the County of Sonoma *Geographic Information System Portal* (Sonoma Co. 2021). Plant species included here are State or Federally Endangered or Threatened species, and/or considered rare by CDFW, and/or are recognized as special-status species (SSS) by CNPS and/or CDFW. Animal species included here are designated as State or Federally Endangered or Threatened, and/or CDFW species of special concern (SSC), and/or CDFW fully protected species (FPS). In addition, nests of most native bird species, regardless of their regulatory status, are protected from take or harassment under the U.S. Migratory Bird Treaty Act (MBTA) and relevant sections of the California Fish & Wildlife Code.

1.3.2 Field Surveys

A wildlife and botanical survey was conducted at the site on February 2, 2021 by PEC biologist Dr. Christopher DiVittorio. A second late-season botanical survey was conducted by PEC botanist Dr. Zoya Akulova on April 19, 2021. A third site visit was performed by Dr. DiVittorio on July 14, 2023 to perform a forensic reconstruction of the number and species of trees that were removed in late 2021, and to perform a formal wetland delineation on the potential wetland identified in the previous BA. The results of this wetland delineation are presented in a separate report.

2.0 RESULTS

2.1 REGIONAL ECOLOGICAL SETTING

Using field surveys, a review of published literature, and the knowledge of PEC staff, all of the natural communities present on and around the project site were assessed. Regionally, the dominant vegetation type is grassland and oak woodland converted to agriculture including orchards and vineyards, rural residential developments, and grazing land associated with dairy operations (Figure 1). In the immediate vicinity of the project parcel is primarily vineyard, grazing lands, and rural residences.

2.2 NATURAL COMMUNITIES WITHIN THE PROJECT SITE

According to Sawyer et al. (2009) *Manual of California Vegetation 2nd Edition* (MCV), the onsite communities consist of the following vegetation types. The western and southern boundaries of the parcel are dominated by riparian corridor classified as *Umbellularia californica* Forest Alliance. The western and central portions of the site are dominated by herbaceous species and is classified as *Bromus* (*diandrus*, *hordeaceous*) Semi-Natural Herbaceous Stands. The eastern portion of the site is forested and composed of roughly equal parts *Pseudotsuga menziesii* Forest Alliance and *Eucalyptus* (*globulus*, *camaldulensis*) Semi-Natural Woodland Stands. The wetland seep identified in the previous BA is classified as *Salix lasiolepis* Shrubland Alliance.

The community descriptions below are organized based on the zones that were surveyed, and the floristic results presented in Appendix B. Overall, the parcel consists of approximately 40% cleared disturbed grassland, 35% mixed oak-conifer-eucalyptus woodland, and 25% riparian woodland (Figure 1).

2.2.1 *Pseudotsuga menziesii* Forest Alliance & *Eucalyptus* spp. Semi-Natural Stands

The eastern portion of the parcel is dominated by a combination of non-native *Eucalyptus* forest and stands of native Douglas fir. Native tree species observed in this habitat include Douglas fir (*Pseudotsuga menziesii*) to 16" DBH, Monterey pine (*Pinus radiata*) to 24” DBH (although these specimens were likely planted), Madroño (*Arbutus menziesii*) to 12" DBH and tanoak (*Notholithocarpus densiflorus*).

Non-native trees and other horticultural plants observed include bluegum (*Eucalyptus globulus*) trees to 40” diameter-at-breast-height (DBH), mimosa (*Acacia dealbata*) to 12” DBH, white poplar (*Populus alba*), cherry plum (*Prunus cerasifera*), firethorn (*Pyracantha angustifolia*), sweet brier (*Rosa rubiginosa*), pink ladies (*Amaryllis belladonna*), Japanese camelia (*Camelia japonica*), cotoneaster (*Cotoneaster pannosus*), milkflower cotoneaster (*Cotoneaster lacteus*), hawthorne (*Crataegus monogyna*), Scotch broom (*Cytisus scoparius*), Canary Islands ivy (*Hedera canariensis*), iris germanica (*Iris germanica*), daffodil (*Narcissus pseudonarcissus*) and Bermuda buttercup (*Oxalis pes-caprae*).

Native species in the understory include California wood sorrel (*Oxalis californica*), toyon (*Heteromeles arbutifolia*), evergreen huckleberry (*Vaccinium ovatum*), poison oak (*Toxicodendron diversilobium*), coyote brush (*Baccharis pilularis*), beaked hazelnut (*Corylus cornuta*), coffeeberry (*Rhamnus*

californica), deerbrush (*Ceanothus integerrimus*), miner's lettuce (*Claytonia perfoliata*), narrow-leaved miner's lettuce (*Claytonia parviflora*), yerba buena (*Clinopodium douglasii*) and pacific bleedinghearts (*Dicentra formosa*).

2.2.2 *Bromus* spp. Semi-Natural Stands

Species in the annual grassland covering the center of the parcel including the proposed cultivation area are primarily invasive non-native species characteristic of formerly grazed grasslands. Non-native species in this habitat comprise approximately 80% cover and include wild oats (*Avena barbata*), soft chess (*Bromus hordeaceous*), brome fescue (*Festuca bromoides*), little rattlesnake grass (*Briza minor*), rattlesnake grass (*Briza major*), dogstail grass (*Cynosurus echinatus*), orchardgrass (*Dactylus glomerata*), velvet grass (*Holcus lanatus*), upright veldt grass (*Ehrharta erecta*), Harding grass (*Phalaris aquatica*), white-flowered onion (*Allium triquetrum*), Italian thistle (*Carduus pycnocephalus*), spiny sowthistle (*Sonchus asper*), bull thistle (*Cirsium vulgare*), prickly lettuce (*Lactuca serriola*), smooth cat's ear (*Hypochaeris glabra*), hairy cat's ear (*Hypochaeris radicata*), hawkbit (*Leontodon saxatilis*), yellow star thistle (*Centaurea solstitalis*), Jersey cudweed (*Pseudognaphalium luteoalbum*), narrow-leaved flax (*Linum bienne*), cutleaf burnweed (*Senecio glomeratus*), chickweed (*Stellaria media*), English plantain (*Plantago lanceolata*), scarlet pimpernel (*Lysimachia arvensis*), sheep sorrel (*Rumex acetocella*), spring vetch (*Vicia sativa*), subterranean clover (*Trifolium subterraneum*), rose clover (*Trifolium hirtum*), bitter cress (*Cardamine hirsuta*), field peppergrass (*Lepidium campestre*), field buttercup (*Ranunculus arvensis*), black mustard (*Brassica nigra*), mouse ear chickweed (*Cerastium glomeratum*), crane's bill geranium (*Geranium molle*), Herb Robert (*Geranium purpureum*) and big heron bill (*Erodium botrys*).

Native species in this habitat comprise approximately 20% cover and include California oatgrass (*Danthonia californica*), blue wildrye (*Elymus glaucus*), blue-eyed grass (*Sisyrinchium bellum*), common yarrow (*Achillea millefolium*), common madia (*Madia elegans*), hayfield tarweed (*Hemizonia congesta*), white-headed navarretia (*Navarretia leucocephala*), giant vetch (*Vicia gigantea*), self-heal (*Prunella vulgaris*), purple sanicle (*Sanicula bipinnatifida*), Pacific sanicle (*Sanicula crassicaulis*), California poppy (*Eschscholzia californica*) and bird's foot trefoil (*Acmispon americanus*). Isolated native trees in the grassland habitat include Coast live oak (*Quercus agrifolia*) to 16" DBH and small individuals of Valley oak (*Quercus lobata*).

2.2.3 *Umbellularia californica* Riparian Corridor

Native species in the riparian corridors along the west and south parcel lines include California bay (*Umbellularia californica*) to 16" DBH, Coast redwood (*Sequoiah sempervirens*) to 16" DBH, Black oak (*Quercus kelloggii*) to 18" DBH, Valley oak (*Quercus lobata*) to 40" DBH, Bigleaf maple (*Acer macrophyllum*) to 8" DBH, creek dogwood (*Cornus sericea* ssp. *occidentalis*), whitebark raspberry (*Rubus leucodermis*), California blackberry (*Rubus ursinus*), cow parsnip (*Heracleum maximum*), Western rush (*Juncus occidentalis*), narrow-leaved sword fern (*Polystichum imbricans*), common ladyfern (*Athyrium filix-femina*), licorice fern (*Polypodium calirhiza*), goldback fern (*Pentagramma triangularis*), Western bracken fern (*Pteridium aquilinum*), small-flowered nemophila (*Nemophila parviflora*), sweet cicely (*Osmorhiza berteroi*), coast man-root (*Marah oregana*), pink honeysuckle (*Lonicera hispidula*), common horsetail (*Equisetum arvense*), bulge hedgenettle (*Stachys ajugoides*) and common bedstraw (*Galium aparine*).

Non-native species in the riparian corridors include Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), French broom (*Genista monspessulana*), periwinkle (*Vinca major*), sweet pea (*Lathyrus latifolius*), forget-me-not (*Myosotis discolor*), bee balm (*Melissa officinalis*), purple deadnettle (*Lamium purpureum*) and cultivated grape (*Vitis vinifera*).

2.2.4 *Salix lasiolepis* Emergent Wetland

Species in and around the isolated wetland/spring in the center of the parcel include some hydrophytic native species such as Arroyo willow (*Salix lasiolepis*), bog rush (*Juncus patens*), common bog rush (*Juncus effusus*), toad rush (*Juncus bufonius*), dense sedge (*Carex densa*), green-sheathed sedge (*Carex feta*), hairy wood rush (*Luzula comosa*), cattail (*Typha latifolia*), wood fern (*Dryopteris arguta*), and mugwort (*Artemesia douglasiana*). Non-native species in the emergent wetland habitat include leafy bracted dwarf rush (*Juncus capitatus*), nut sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*) and pennyroyal (*Mentha pulegium*).

2.3 WILDLIFE

Wildlife species observed directly and indirectly across all three site visits include raven (*Corvus corax*), turkey vulture (*Cathartes aura*), acorn woodpecker (*Melanerpes formicivorus*), mourning dove (*Zenaida macroura*), black-eyed junco (*Junco hyemalis*), Western scrub jay (*Aphelocoma californica*), Stellar's jay (*Cyanocitta stelleri*), ash-throated flycatcher (*Myiarchus cinerascens*), California quail (*Callipepla californica*), American robin (*Turdus migratorius*), house finch (*Haemorhous mexicanus*), chipping sparrow (*Spizella passerina*), spotted towhee (*Pipilo maculatus*), red-tailed hawk (*Buteo jamaicensis*), Western grey squirrel (*Sciurus griseus*), excavation mounds of pocket gopher (*Thomomys bottae*), runways of California vole (*Microtus californicus*), scat of black-tailed jackrabbit (*Lepus californicus*), calls of Pacific tree frog (*Pseudacris regalia*), and domestic goats domestic goat (*Capra aegagrus hircus*).

2.4 WATERCOURSES & POTENTIAL WETLANDS

Jurisdictional watercourses onsite were classified according to the three-tier method used by the California Department of Forestry & Fire Protection (CALFIRE 2017) and included as a reference in Appendix E. Based on these criteria there are is one unnamed Class I watercourse onsite that flows north along the west parcel line. There are also several Class II drainages that feed into this Class I watercourse, and that extend a short distance east into the parcel. There is one culvert that drains the northwest portion of the parcel (Figure 11), that has a non-jurisdictional swale upslope from it. There are several areas where erosion control materials have been used in the area where an abandoned trailer was removed by the previous owners and the area remediated (Figure 9).

Potential wetlands onsite were assessed for this BA based on the likelihood to satisfy the three-tier wetland delineation criteria used by the Army Corps of Engineers *Wetland Delineation Manual* (ACOE 1987). Based on these criteria there are two locations with potentially jurisdictional wetlands identified onsite. The first area is surrounding the Class I and II watercourses, that likely have vegetation and soils that meet the criteria, however these would be protected within the setbacks required for Class I and II watercourses. There is also an isolated spring located in the center-south portion of the parcel that has some wetland vegetation surrounding it including cattails and alder trees (Figure 10). A protocol-level wetland delineation was performed on this wetland on July 14, 2023 and the results of this delineation are presented in a separate report.

2.5 SOILS & LOCAL GEOMORPHOLOGY

The parent materials on the project parcel are typical of central Sonoma County, with easily erodible sediments of the Franciscan Formation dissected by highly seasonal rivers (USGS 1985) (Appendix F). The central two-thirds of the project parcel including the proposed cultivation area is mapped as eroded Goldridge fine sandy loam, 15% to 30% slopes (GdE2). This soil type also has lesser proportions of Cotati (5%), Steinbeck (5%), and Sebastopol (5%) soil types, and is designated not prime farmland. The forested eastern portion of the site that borders Burnside Road is mapped as Goldridge fine sandy loam, 9% to 15% slopes.

The far western portion of the site along the riparian corridor is mapped as Steinbeck loam, 30% to 50% slopes (SnF), and is designated not prime farmland. This soil type also has lesser proportions of Goldridge (8%) and Los Osos (7%) soil types. All of the above soil types are weathered from sandstone based parent materials, and there are no serpentine or other ultramafic rock types onsite and no serpentine-derived soils (Appendix F). There are no alkalai or vernal pool soil types onsite.

2.6 FORENSIC RECONSTRUCTION OF TREE REMOVAL

A number of trees were removed on the project parcel in 2021 without the benefit of a tree removal permit. During the July site visit, and using online databases including aerial photography, PEC performed a forensic reconstruction of the trees that were removed, and estimated their size and species based on parameters such as canopy diameter and reflectance of the canopy at different times of year. The results of this forensic reconstruction are presented in Table 1, below.

The species of tree was determined by combining the results of several different approaches. One approach was to compare historical aerial photographs from different seasons, identifying reflectivity of different types of tree canopy with known remaining trees on the parcel. These reflectivity values were then used on historical aerial photographs from the cleared area to determine the different species of trees that were removed. This method is good for determining deciduous versus evergreen trees. A second approach was to use high resolution aerial imagery to determine the branching pattern of different species of trees based on remaining specimens onsite, and comparing that with the branching pattern of removed trees. This method is good for determining a wide variety of tree species and particularly different types of evergreen trees (conifers). A third method is to evaluate the stumps left in the field based on site visits, examining the bark and wood of removed trees. All three methods were used to cross-verify the results of this forensic reconstruction.

The size of trees was determined based on their canopy diameter as measured in aerial photographs from before tree removal occurred, and comparing those values with the canopy diameter of remaining trees and measuring their diameter in the field. This method is good for estimating the size of mature canopy forming trees, however it does not account for trees that do not reach the top of the canopy and are thus not observable from aerial photographs. It is likely, however, that most sub-canopy vegetation removed did not meet the 9" diameter criteria for protection under the Sonoma County Tree Protection Ordinance.

Table 1: Estimated numbers and sizes of all trees removed in 2021 based on forensic reconstruction, including recommended mitigation ratios based on Chart 1 from Sonoma County Tree Protection Ordinance (Sec. 26-88-010).

Tree Species / Size Class	# Removed	Multiplier*	# Replacement
9-15" diameter			
Pseudotsuga menziesii	0	1	0
Eucalyptus spp.	4	1	4
Quercus kelloggii	3	1	3
Quercus lobata	1	1	1
Quercus agrifolia	4	1	4
Umbellularia californica	0	1	0
Pinus radiata	0	1	0
15-21" diameter			
Pseudotsuga menziesii	5	2	10
Eucalyptus spp.	13	2	26
Quercus kelloggii	5	2	10
Quercus lobata	1	2	2
Quercus agrifolia	3	2	6
Umbellularia californica	5	2	10
Pinus radiata	0	2	0
21-27" diameter			
Pseudotsuga menziesii	4	3	12
Eucalyptus spp.	2	3	6
Quercus kelloggii	0	3	0
Quercus lobata	0	3	0
Quercus agrifolia	0	3	0
Umbellularia californica	0	3	0
Pinus radiata	3	3	9
27-33" diameter			
Pseudotsuga menziesii	1	4	4
Eucalyptus spp.	3	4	12
Quercus kelloggii	0	4	0
Quercus lobata	0	4	0
Quercus agrifolia	0	4	0
Umbellularia californica	0	4	0
>33" diameter			
Pseudotsuga menziesii	2	5	10
Eucalyptus spp.	4	5	20
Quercus kelloggii	0	5	0
Quercus lobata	0	5	0
Quercus agrifolia	0	5	0
Umbellularia californica	0	5	0
Pinus radiata	0	5	0
Pinus radiata	0	5	0

** Multiplier is based on Chart 1 in So. Co. Tree Protection Ordinance Sec. 26-88-010.*

3.0 SUMMARY & CONCLUSIONS

3.1 VEGETATION

No special-status plant species were observed during the surveys performed at the site in early- and late-spring 2021. Several Valley Oak trees were identified onsite that vary in diameter from 5" to 40" and these should not be removed. All trees over 9" diameter should not be removed without permits from the County of Sonoma.

A number of trees greater than 9" diameter were removed without permits during 2021, and the results of the forensic reconstruction performed in July 2023 are presented above in Table 1. Based on these results, and the tree replacement ratios prescribed by the Sonoma County Tree Protection Ordinance (Sec. 26-88-010), the following numbers and species of trees are recommended to be replaced onsite in Table 2. Trees should be replaced on private residential parcels of at least 1.5 acres, or on any commercial or industrial zoned parcel, as per Sonoma County Tree Protection Ordinance. In general, trees should be replaced with the same species that were removed, except for the individuals of *Eucalyptus* that should be replaced with one of the other native species.

Table 2: Recommended numbers and species of all trees to be replaced. Replacement number is based on Table 1, above, and Chart 1 from Sonoma County Tree Protection Ordinance (Sec. 26-88-010).

Tree Species	# Removed	# to Replace
Pseudotsuga menziesii	12	36
Eucalyptus spp.	26	68
Quercus kelloggii	8	13
Quercus lobata	2	3
Quercus agrifolia	7	10
Umbellularia californica	5	10
Pinus radiata	3	9
Total	**63**	**149**

3.2 WILDLIFE

No special-status animal species were observed during the surveys performed at the site in early- and late-spring 2021. There is a stand of mature conifer trees in the eastern side of the site that provides potential habitat for nesting birds, and any additional tree removal should only proceed after clearing the tree for nesting birds and other special-status animals by a qualified biologist. There is also potential habitat for special-status amphibians including Foothill yellow-legged frog, California red-legged frog (CRLF), and California giant salamander in the riparian zone and potential wetland, thus setbacks as described below in Section 3.3 should be observed and no work or disturbance should occur within the setback areas. In

addition, if grading occurs within 300 feet of the Class I watercourse or within 200 feet of the Class II watercourses or potential wetland, we recommend clearing the area by a qualified biologist with experience monitoring for special-status amphibians immediately prior to ground disturbance.

3.3 EROSION, WATERCOURSES & WETLANDS

Aside from the fringing riparian habitat surrounding the Class I and II watercourses, there is one jurisdictional wetland located in the center of the parcel, that can be identified by the presence of sedges, rushes, willows, and blackberry plants. As per State Water Resources Control Board *Cannabis* General Order WQ 2019-0001-DWQ, setbacks of 150 feet should be observed from the Class I watercourse, and 100 feet from the Class II watercourses and the wetland feature. During and after construction, all of the BMPs in Appendix G shall be followed to the greatest extent practicable, so that there are no pathways for sediment to enter any of the jurisdictional watercourses shown in Figure 3. This includes installation of adequate erosion control materials including wattles and silt fencing around the setback perimeters of all watercourses and potential wetlands, and education of all contractors entering the site on how to properly identify wetlands and watercourses. As long as these BMPs are followed, there should be no direct routes for sediment to enter the watercourses or wetlands onsite and thus no impacts to waters of the State due to implementation of the proposed project. Permanent erosion control materials should be 100% biodegradable (including wattles), and only native species from local genotypes should be used for all revegetation activities. Sterile wheat is an acceptable emergency alternative but only native species should be used for anything other than emergency repairs.

4.0 REGULATORY FRAMEWORK

4.1 FEDERAL

4.1.1 Endangered Species Act (ESA)

The U.S. Fish & Wildlife Service (USFWS) has jurisdiction over federally-listed threatened and endangered species under ESA. USFWS also maintains a list of proposed and candidate species that are not legally protected under the ESA, but are often included in their review of a project as they may become listed in the near future. The ESA protects listed animal species from harm or take which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that results in death or injury to a listed species. An activity can be defined as a take even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under ESA if they occur on federal lands. Pursuant to the requirements of the ESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed threatened or endangered species (plants and animals) may be present in the project area and determine whether the proposed project may affect such species. Any activities that could result in the take of a federally-listed species will require formal consultation with USFWS.

4.1.2 Migratory Bird Treaty Act (MBTA)

The MTBA implements international treaties between the U.S. and other nations that were enacted to protect migratory birds, their parts, eggs, and nests from activities including hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. All migratory birds and their nests are protected from take and other impacts under MTBA (16 USC §703, *et. seq*.).

4.1.3 Eagle Protection Acts

Both bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are additionally protected under the Eagle Protection Act (16 USC §669, *et. seq*.) and the Bald & Golden Eagle Protection Act (16 USC §668-668d).

4.1.4 Clean Water Act (CWA)

Section 404 Under Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers (USACE) is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3(a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed isolated wetlands and, depending on the circumstances, may also be subject to USACE jurisdiction. In general, a USACE permit must be obtained before placing fill in wetlands or other waters of the United States. The type of permit depends on the acreage involved and the purpose of the proposed fill. Minor amounts of fill are sometimes covered by Nationwide Permits, which were established to streamline the permit process for projects with minimal impacts on wetlands or other waters of the United States. An Individual Permit is required for projects that result in more than a minimal impact on jurisdictional areas. The Individual Permit process requires evidence that fill of jurisdictional areas has been minimized to the extent practicable and provides an opportunity for public review of the project.

Section 401 Under Section 401 of the CWA, "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states the discharge will comply with the applicable provisions under the Federal Clean Water Act." In this case, applicants must obtain a Section 401 Water Quality Certification from, the Regional Water Quality Control Board from the region in which the project takes place.

4.2 STATE

4.2.1 California Environmental Quality Act (CEQA)

The following CEQA guidelines are intended to determine significance thresholds when analyzing the potential impacts of a proposed project on biological resources. The following is a list of criteria for determining if impacts are considered significant:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plan, policies, or regulations, or by the California Department of Fish & Wildlife (CDFW) or U.S. Fish & Wildlife Service (USFWS).

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

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

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

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

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

4.2.2 California Endangered Species Act (CESA)

The State of California enacted CESA in 1984 and is similar to the federal ESA but pertains to State-listed threatened and endangered species. CESA requires State agencies to consult with CDFW when preparing a CDQA documents to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or results in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternative available (Fish & Game Code [FGC] §2080.) CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify reasonable and prudent alternatives to the proposed project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species of the take is incidental to carrying out an other wise lawful project thar has been approved under

CEQA (FGC §2081).

4.2.3 California Fish & Game Code

Under CESA, CDFW has the responsibility for maintaining a list of threatened and endangered species (FGC §2070). Fish & Game Code §2050-2098 outline the protection provided to California's rare, endangered, and threatened species. Fish & Game Code §2080 prohibits the taking of plants and animals listed under CESA. Fish & Game Code §2081 establishes an incidental take permit program for State-listed species. CDFW also maintains a list of candidate species that it formally notices as being under review for addition to the list of endangered or threatened species.

In addition, the Native Plant Protection Act of 1977 (NPPA) (FGC §1900, *et seq*.) prohibits the taking, possessing, or sale within the State of any plants with a State designation of rare, threatened, or endangered (as defined by CDFW). An exception to this prohibition in NPPA allows landowners, to take listed plant species under specified circumstances, provided that the owners first notify CDFW and give the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. Fish & Game Code §1913 exempts from the take prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right-of-way." Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

In addition to formal listing under federal ESA and CESA, some species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are those listed as a "Species of Special Concern." CDFW maintains lists of Species of Special Concern that serve as species "watch lists." Species with this status may have limited distributions or limited populations, and/or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA, and specific protection measures may be warranted. In addition to Species of Special Concern, CDFW Special Animals List identifies animals that are tracked by the California Natural Diversity Database (CNDDB) and may be potentially vulnerable but warrant no federal interest and no legal protection.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines §15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines §15380 (Rare or Endangered Species) provides for the assessment of unlisted species as Rare or Endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society (CNPS) List ranked 1A, 1B, and 2 would typically require evaluation under CEQA.

Fish & Game Code §3500-5500 outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Under Fish & Game Code §3503.5, it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. To comply with the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must

determine whether any State-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species. Project-related impacts to species on CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under Fish & Game Code §206.591. Authorization from CDFW would be in the form of an Incidental Take Permit.

Fish & Game Code §1602 requires any entity to notify CDFW before beginning any activity that "may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake" or "deposit debris, waste, or other materials that could pass into any river, stream, or lake." This definition includes waters that are episodic and perennial and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement (LSAA) will be required if CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.

4.2.4 Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the State" (Water Code §13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State" (Water Code §13050(e)).

In addition, *Cannabis* cultivation is subject to State Water Board Order Cannabis Cultivation General Order

4.2.5 California Native Plant Society (CNPS)

The CNPS maintains a rank of plant species that are native to California and that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Following are the definitions of the CNPS ranks:

- 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 common elsewhere
- Rank 2B: Plants rare, threatened, or endangered in California but more common elsewhere
- Rank 3: Plants about which more information is needed
- Rank 4: Watch List: Plants of limited distribution

Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. All plants appearing on CNPS Lists 1 or 2 are considered to meet the CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, potential impacts to these species or their habitats should be analyzed during the preparation of environmental documents pursuant to CEQA, as they may meet the definition of Rare or Endangered under the CEQA Guidelines Section 15380 criteria.

4.2.6 State Water Resources Control Board Cannabis Cultivation General Order

In addition to the above regulations, *Cannabis* cultivation is subject to State Water Resources Control Board (SWRCB) Cannabis Cultivation General Order No. WQ-2019-0001-DWQ (Order). This statewide

Order specifies measures that must be taken to ensure water quality based on the size of the cultivation area (Tier 1 vs Tier 2), the risk determination based on potential to affect water quality (low, medium, high), and watercourse classifications and minimum setbacks that must be followed. Currently, Class I watercourses (perennial streams, lakes, ponds) must observe 150 foot setbacks, Class II watercourses (intermittent streams or wetlands) must observe 100 foot setbacks, and Class III watercourses (ephemeral streams) must observe 50 foot setbacks. Other measures that must be taken to protect water resources are also provided in the text of the statewide Order.

4.3 REGIONAL & LOCAL

Natural resource use in Sonoma County is guided by the Sonoma County General Plan (Sonoma County 2023) and regulated by Sonoma County Code. Below is a sample of relevant codes and ordinances that pertain to vegetation management and commercial *Cannabis* cultivation on lands within the County's jurisdiction.

4.3.1 County of Sonoma Municipal Code

Various protections exist in Sonoma County pertaining to the protection of trees considered important for the preservation of ecological and aesthetic values.

Tree Protection Ordinance [Sec. 26-88-010(m)]

This ordinance requires applicants for development permits to identify all trees onsite greater than 9" DBH that are to be removed and those that are to be protected during the course of site development, with limited exceptions for agricultural uses. Trees intended for preservation are required to be protected by various measures during construction. Trees that were not planned for removal are damaged, replacements or payment of an in-lieu fee is required. Trees that are intended to be removed during site development are to be mitigated for at a ratio that varies between 1:1 and 1:5 depending on the size of the tree to be removed. In lieu fees may be assessed if the applicant cannot or does not wish to replace trees at the recommended ratios, and such fees will be used to preserve stands of native trees on public lands or maintained private open space.

Heritage and Landmark Tree Ordinance (Chapter 26D)

The Heritage and Landmark Tree Ordinance describes procedures for adding a tree to the County's list of protected trees due to their significance to the history or aesthetic values of the County. A list of approved Heritage and Landmark trees is available from the County.

Valley Oak Habitat Combining District (Sec. 26-67)

The Valley Oak Combining Zone was established to protect known stands of and potential habitat for Valley Oak (*Quercus lobata*). Valley Oaks are determined to have particularly high conservation and aesthetic values and parcels that are located in the designated Valley Oak Combining Zone are largely prohibited from removing Valley Oak trees.

Riparian Corridor Combining Zone (Sec. 26-65)

The Riparian Corridor Combining Zone was established to enhance and protect the natural function and biological values of riparian corridors and streams in the County. By protecting streams and their surrounding riparian corridors this Ordinance seeks to protect riparian vegetation and water resources,

improve floodplain management, increase wildlife habitat and movement, improve shade along watercourses to enhance fisheries, maintain slope stability, promote groundwater recharge, and preserve opportunities for recreation, education and aesthetic appreciation This ordinance largely prohibits grading, vegetation removal, agricultural cultivation, structures and roads within recognized stream channels or streamside conservation areas.

County of Sonoma Commercial Cannabis Cultivation (Sec. 26-88-254)

The County's Commercial Cannabis Cultivation Ordinance provides comprehensive guidelines on the size, location, and permitted activities for all commercial Cannabis facilities within the County's jurisdiction including restrictions on water sources, types of fencing, pest control measures, vegetation clearing, noise and visual impacts, storage and disposal of waste products, and grading.

4.3.2 County of Sonoma General Plan

The Sonoma County General Plan Policy OSRC-7 designates a number of goals, objectives, and policies that are designed to preserve economic, conservation, recreation, and open space values of natural lands. These directives include protections for old growth Redwood and Douglas Fir forests, identification and preservation of native trees in the design of discretionary projects, and designating Valley Oak protection zones.

4.3.3 Habitat Conservation Plan / Natural Communities Conservation Plan

The project site is not located in an area that is covered by any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no additional mitigation related to local or regional conservation plans is necessary.

5.0 REFERENCES

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FIGURE 1: REGIONAL LOCATION

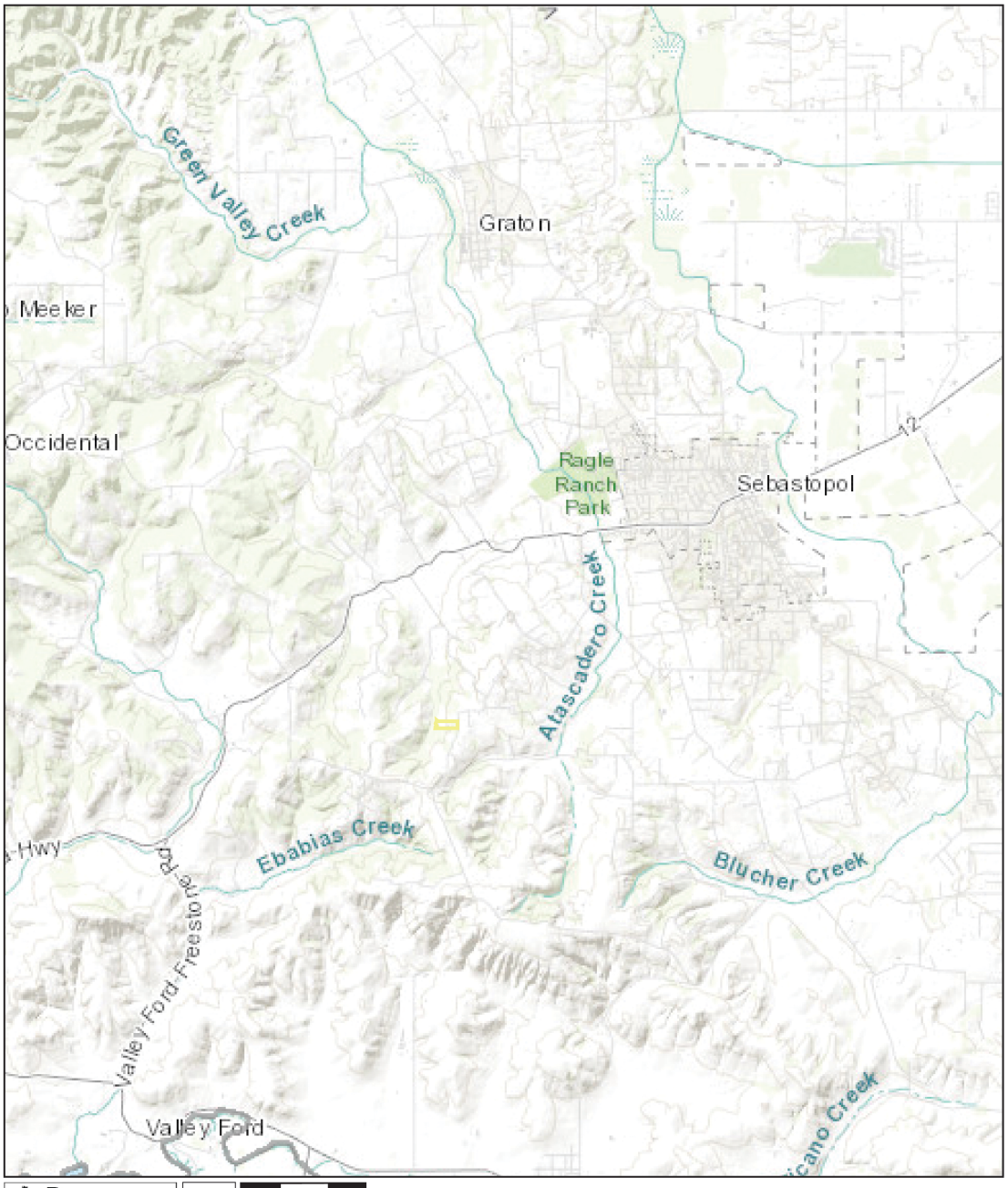
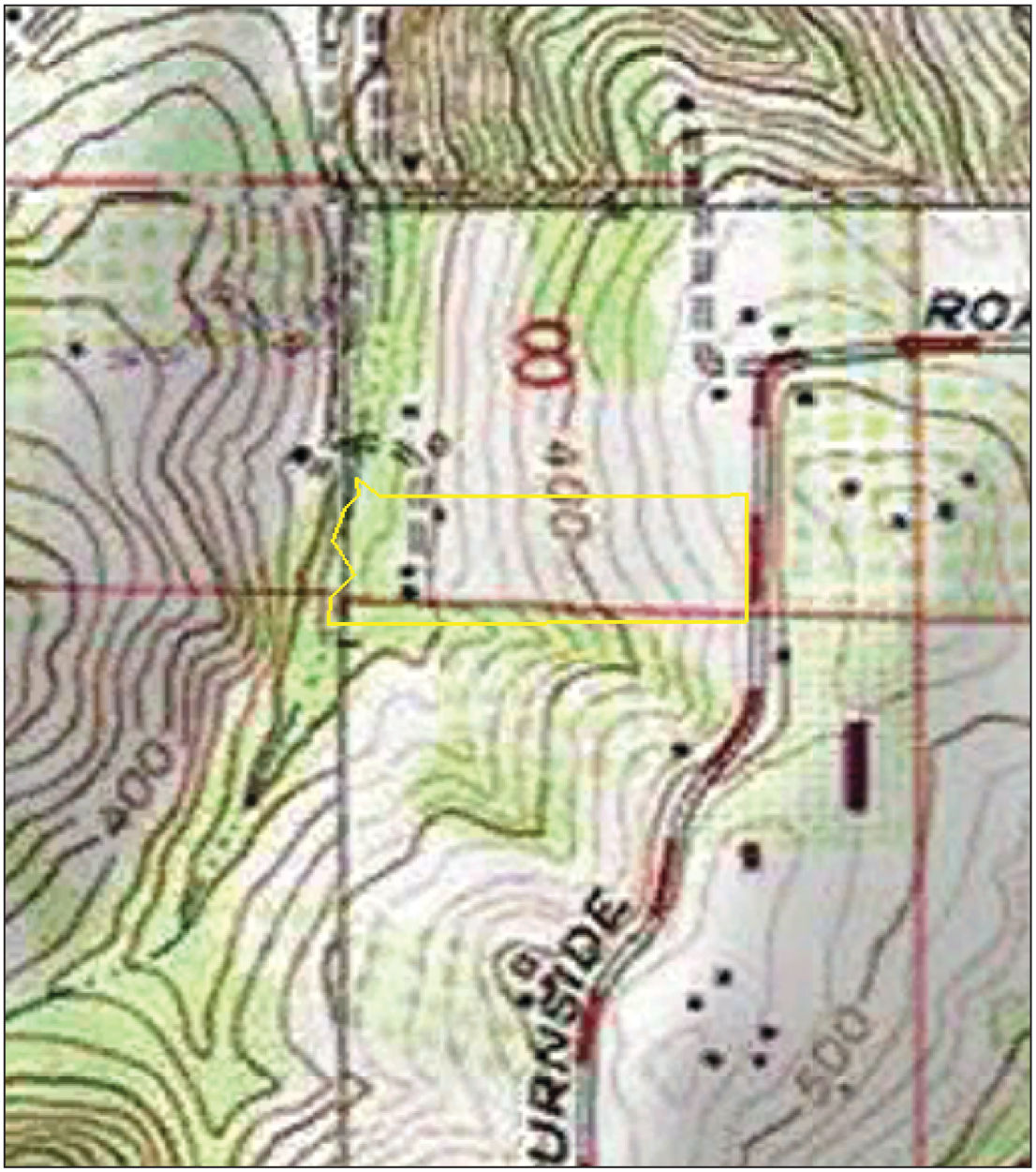


FIGURE 2: 40-FOOT CONTOURS



SOURCES: USGS

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 3: WATERCOURSES

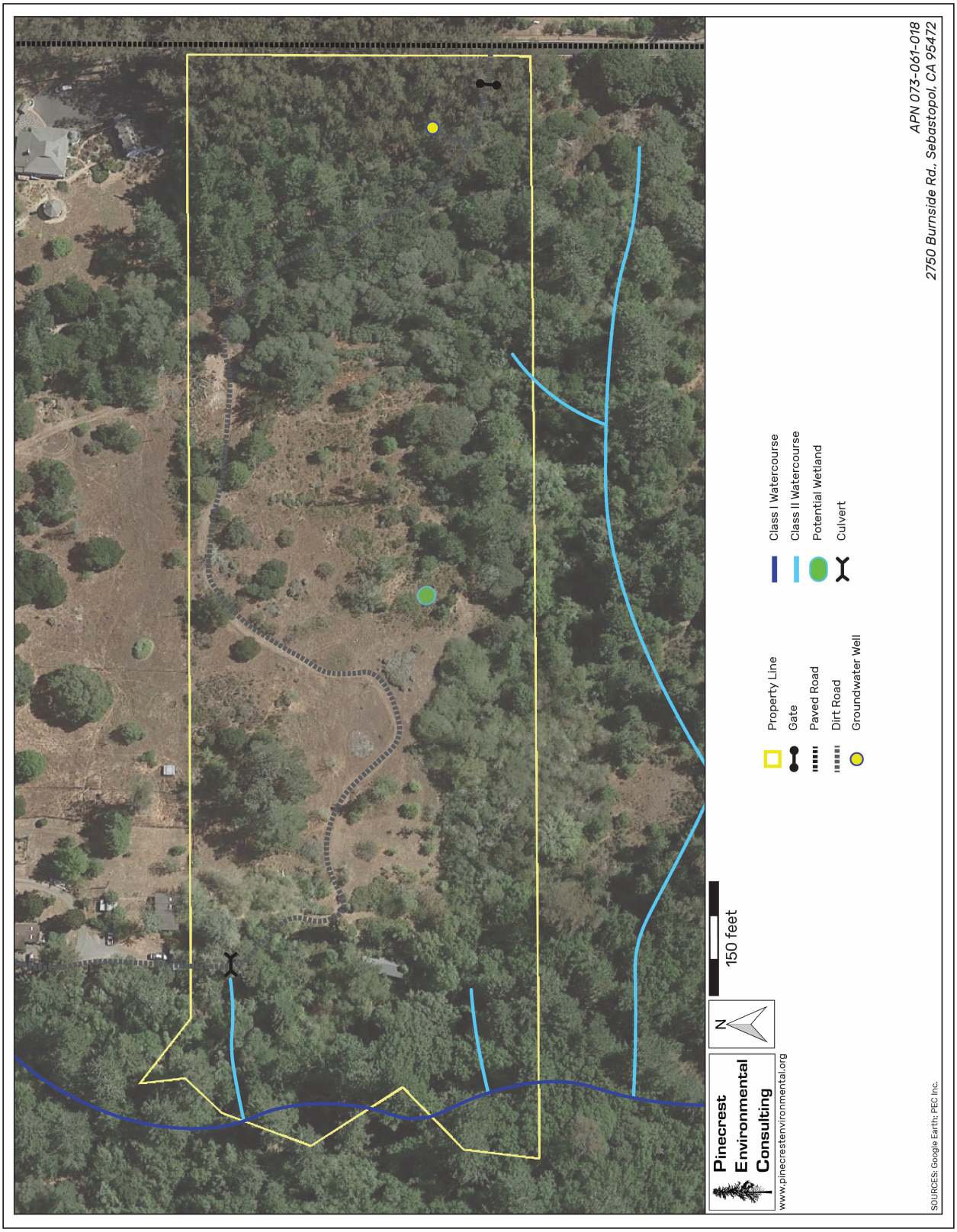


FIGURE 4: PHOTOGRAPH OF ACCESS GATE

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 5: PHOTOGRAPH OF PROPOSED CULTIVATION AREA

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 6: PHOTOGRAPH OF GROUNDWATER WELL

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 7: PHOTOGRAPH OF CONIFEROUS FOREST

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 8: PHOTOGRAPH OF RIPARIAN CORRIDOR

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

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FIGURE 9: PHOTOGRAPH OF EROSION CONTROL MATERIALS

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

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FIGURE 10: PHOTOGRAPH OF SPRING

Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 11: PHOTOGRAPH OF CULVERT

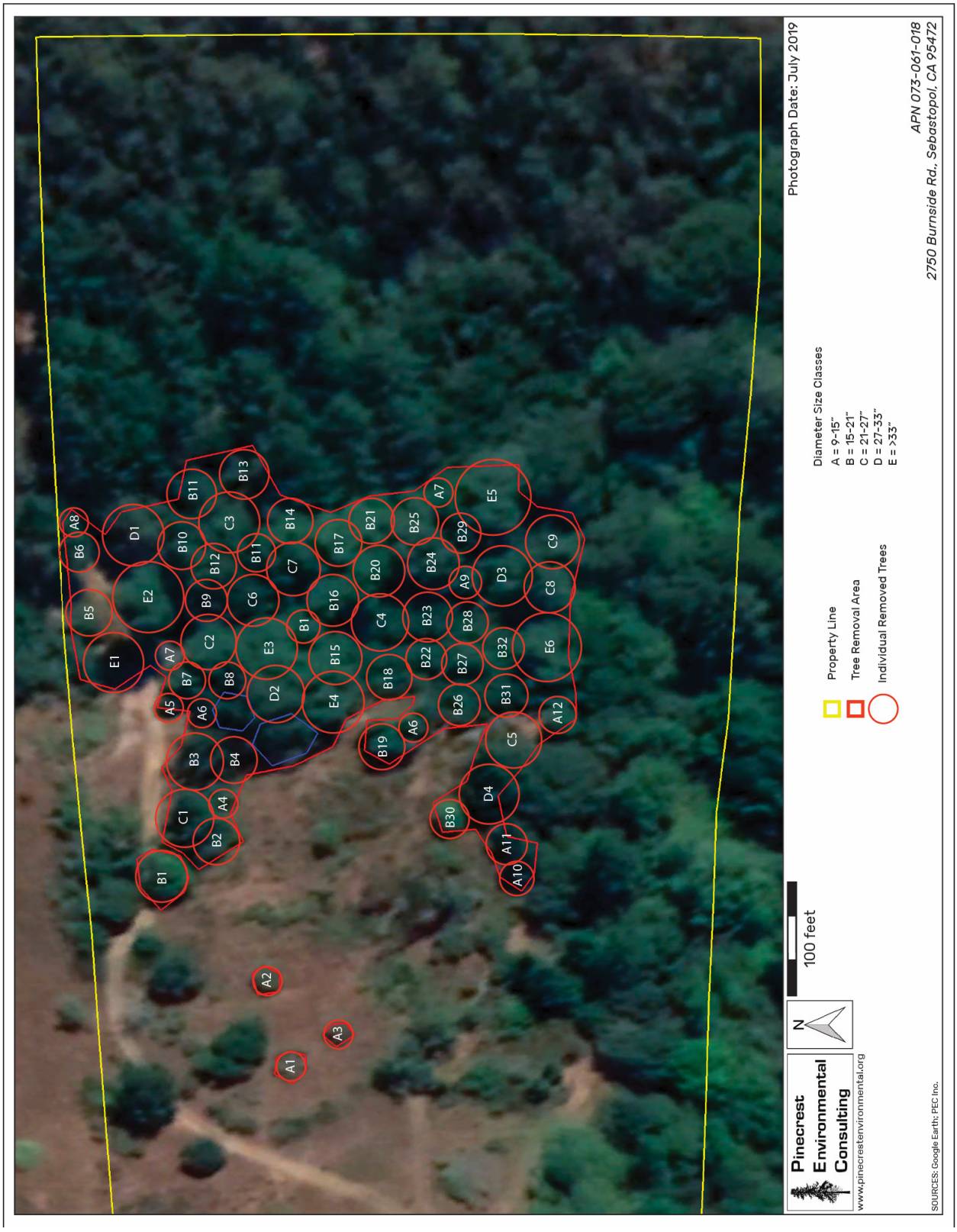
Pinecrest Environmental Consulting
www.pinecrestenvironmental.org

SOURCES: PEC Inc.

APN 073-061-018
2750 Burnside Rd., Sebastopol, CA 95472

FIGURE 12: AERIAL PHOTOGRAPH OF CLEARED AREA

FIGURE 13: RECONSTRUCTION OF REMOVED TREES



APPENDIX A: SPECIAL-STATUS SPECIES CONSIDERED

The following is a list of special-status plant and animal species generated based on knowledge of the species and habitats of Sonoma County by PEC staff, from various State and Federal databases, and from the California Natural Diversity Database (CNDDB). Known occurrences within 5 miles of the project site are shown in bold.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
PLANTS			
Alkali milk-vetch (*Astragalus tener* var. *tener*)	—/—/1B.2	Valley grasslands, alkali sinks	None: No suitable alkali habitat exists onsite.
Anthony peak lupine (*Lupinus antoninus*)	—/—/1B.2	Mixed evergreen forest	Very Low: Some forest habitat exists onsite.
Baker's goldfields (*Lasthenia californica* ssp. *bakeri*)	**—/—/1B.2**	**Coastal grasslands**	**Low: Some grassland habitat exists, although this species prefers coastal habitats.**
Baker's larkspur (*Delphinium bakeri*)	FE/SE/1B.1	Coastal scrub	Low: Some scrub habitat exists onsite.
Baker's manzanita (*Arctostaphylos bakeri* ssp. *bakeri*)	**—/—/1B.1**	**Serpentine chaparral, mixed evergreen forest**	**None: No serpentine habitat exists onsite.**
Baker's meadowfoam (*Limnanthes bakeri*)	—/ST/1B.1	Vernal pools, freshwater wetland	Very Low: No suitable vernal pool habitat onsite.
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	**—/—/1B.1**	**Vernal pools, riparian woodland**	**Very Low: No suitable vernal pool habitat exists onsite.**
Beaked tracyina (*Tracyina rostrata*)	—/—/1B.2	Valley grassland, foothill woodland	Low: Some grassland habitat exists onsite.
Bent-flowered fiddleneck (*Amsinckia lunaris*)	—/—/1B.2	Valley grassland, foothill woodland	Medium: Some grassland habitat exists onsite.
Big scale balsamroot (*Balsamorhiza macrolepis*)	—/—/1B.2	Valley grassland	Low: Some grassland habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Blasdale's bent grass (*Agrostis blasdalei*)	—/—/1B.2	Coastal prairie	Low: Some grassland habitat exists onsite.
Blue coast gilia (*Gilia capitata* ssp. *chamissonis*)	—/—/1B.1	Coastal sand dunes	None: No sand dune habitat exists onsite.
Bluff wallflower (*Erysimum concinnum*)	—/—/1B.2	Coastal scrub	Low: Some scrub habitat exists onsite.
Bogg's Lake hedge-hyssop (*Gratiola heterosepala*)	—/—/1B.2	Freshwater marsh, riparian	Very Low: No suitable wetland habitat exists onsite.
Bolander's horkelia (*Horkelia bolanderi*)	—/—/1B.2	Yellow pine forest, grassland	Low: Some grassland habitat exists onsite.
Brandegee's eriastrum (*Eriastrum brandegeeae*)	—/—/1B.1	Chaparral	None: No suitable chaparral habitat exists onsite.
Bristly sedge (*Carex comosa*)	—/—/2B.1	Freshwater marsh, riparian	Low: Some marginally suitable wetland habitat exists onsite.
Brownish beaked-rush (*Rhynchospora capitellata*)	**—/—/2B.2**	**Freshwater marsh, riparian**	**Medium: Some marginally suitable wetland habitat exists onsite.**
Burke's goldfields (*Lasthenia burkei*)	**FE/SE/1B.1**	**Vernal pools**	**Very Low: No vernal pool habitat exists onsite.**
California alkali grass (*Puccinellia simplex*)	—/—/1B.2	Grassland, riparian	None: No alkali wetland habitat exists onsite.
California beaked-rush (*Rhynchospora californica*)	**—/—/1B.1**	**Freshwater wetlands**	**Medium: Some marginally suitable wetland habitat exists onsite.**
California satintail (*Imperata brevifolia*)	—/—/2B.1	Chaparral, coastal scrub	None: No chaparral habitat exists onsite.
California sedge (*Carex californica*)	—/—/2B.3	Wetlands	Very Low: Some marginally suitable wetland habitat exists onsite.
Calistoga ceanothus (*Ceanothus divergens*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Calistoga popcornflower (*Plagiobothrys strictus*)	FE/ST/1B.1	Wetland, riparian	Very Low: Some marginally suitable wetland habitat exists onsite.
Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	—/—/1B.1	Valley grassland	Very Low: Some grassland habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Clara Hunt's milk vetch (*Astragalus claranus*)	—/—/1B.1	Chaparral, grassland	None: No suitable chaparral habitat exists onsite.
Coast lily (*Lilium maritimum*)	—/—/1B.1	Coastal prairie	Low: Some grassland habitat exists onsite.
Coastal bluff morning glory (*Calystegia purpurata* ssp. *saxicola*)	—/—/1B.2	Coastal prairie	Very Low: Some grassland habitat exists onsite.
Cobb Mountain lupine (*Lupinus sericatus*)	—/—/1B.2	Chaparral, pine forest	None: No suitable chaparral habitat exists onsite.
Colusa layia (*Layia septentrionalis*)	—/—/1B.2	Chaparral, valley grassland	Low: Some grassland habitat exists onsite; no chaparral habitat onsite.
Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*)	**—/—/1B.2**	**Grassland, coastal scrub**	**Medium: Some grassland habitat exists onsite.**
Contra Costa goldfields (*Lasthenia conjugens*)	**FE/—/1B.1**	**Vernal pool**	**None: No vernal pool habitat exists onsite.**
Crystal Springs Lessingia (*Lessingia arachnoidea*)	—/—/1B.2	Serpentine grassland	None: No serpentine habitat onsite.
Cunningham Marsh cinquefoil (*Potentilla uliginosa*)	**—/—/1A**	**Freshwater marsh**	**Low: Some marginally suitable wetland habitat exists onsite.**
Deceiving sedge (*Carex saliniformis*)	—/—/1B.2	Coastal prairie	Very Low: Some grassland habitat exists onsite.
Deep scarred cryptantha (*Cryptantha excavata*)	—/—/1B.2	Foothill woodland	Very Low: Some grassland habitat exists onsite.
Dimorphic snapdragon (*Antirrhinum subcordatum*)	—/—/4.3	Serpentine, chaparral	Very Low: No serpentine habitat exists onsite.
Dwarf downingia (*Downingia pusilla*)	—/—/2B.2	Vernal pool, freshwater wetland	None: No vernal pool habitat exists onsite.
Dwarf soaproot (*Chlorogalum pomeridianum* var. *minus*)	—/—/1B.2	Serpentine chaparral	None: No serpentine chaparral habitat exists onsite.
Eel-grass pondweed (*Potamogeton zosteriformis*)	—/—/2B.2	Freshwater wetland, aquatic	Low: Some marginally suitable wetlands exist onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Fragrant fritillary (*Fritillaria liliacea*)	**—/—/1B.2**	**Freshwater wetland, coastal prairie**	**Medium: Some suitable habitat exists onsite.**
Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*)	FE/SE/1B.1	Chaparral	Very Low: No suitable chaparral habitat exists onsite.
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	—/—/1B.2	Coastal prairie	Very Low: Some grassland habitat exists onsite.
Geysers panicum (*Panicum acuminatum* var. *thermale*)	—/—/1B.2	Chaparral, wetlands	None: No suitable chaparral habitat exists onsite.
Glandular western flax (*Hesperolinon adenophyllum*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Golden larkspur (*Delphinium luteum*)	**FE/SR/1B.1**	**Chaparral, coastal prairie**	**Medium: Some grassland habitat exists onsite.**
Grassleaf water plantain (*Alisma gramineum*)	—/—/2B.2	Wetland, riparian	Low: Some suitable wetland habitat exists onsite.
Greene's narrow-leaved daisy (*Erigeron greenei*)	**—/—/1B.2**	**Serpentine grassland**	**Very Low: No serpentine habitat exists onsite.**
Hall's harmonia (*Harmonia hallii*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Hoffman's bristly jewelflower (*Streptanthus glandulosus* spp. *hoffmanii*)	—/—/1B.3	Chaparral, foothill woodland	None: No suitable chaparral habitat exists onsite.
Holly-leaved ceanothus (*Ceanothus purpureus*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*)	—/—/1B.2	Foothill woodland	Low: Some woodland habitat exists onsite.
Humboldt County milk vetch (*Astragalus agnicidus*)	—/—/1B.1	Mixed evergreen forest	Low: Some forest habitat exists onsite.
Jepson's coyote thistle (*Eryngium jepsonii*)	—/—/4.2	Wetlands and vernal pools	None: No vernal pool habitat exists onsite.
Jepson's leptosiphon (*Leptosiphon jepsonii*)	—/—/1B.2	Chaparral, serpentine grassland	None: No suitable chaparral or serpentine habitat exists onsite.
Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*)	—/—/1B.2	Chaparral, serpentine grassland	None: No suitable chaparral or serpentine habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Kenwood marsh checkerbloom (*Sidalcea oregana* ssp. *valida*)	FE/SE/1B.1	Freshwater wetlands	Very Low: Some suitable wetland habitat exists onsite.
Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*)	—/—/1B.3	Chaparral, foothill woodland	Very Low: No suitable chaparral habitat exists onsite.
Lake County stonecrop (*Sedella leiocarpa*)	—/—/1B.1	Vernal pools	Very Low: No suitable vernal pool habitat exists onsite.
Legenere (*Legenere limosa*)	—/—/1B.1	Vernal pools	Very Low: No vernal pool habitat exists onsite.
Loch Lomond button-celery (*Eryngium constancei*)	FE/SE/1B.1	Freshwater wetland	Very Low: Some marginally suitable wetland habitat exists onsite.
Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*)	—/—/1B.2	Wetland, riparian	Very Low: Some marginally suitable wetland habitat exists onsite.
Many-flowered navarretia (*Navarretia leucocephala* spp. *plieantha*)	FE/SE/1B.2	Vernal pools	None: No vernal pool habitat exists onsite.
Maple leaved checkerbloom (*Sidalcea malachroides*)	—/—/4.2	Coastal prairie, coniferous forest	Low: Some suitable habitat exists onsite.
Marin knotweed (*Polygonum marinense*)	—/—/3.1	Coastal salt marsh	None: No coastal salt marsh habitat exists onsite.
Marsh checkerbloom (*Sidalcea oregana* ssp. *hydrophila*)	—/—/1B.2	Freshwater wetland, riparian	Low: Some suitable riparian habitat exists onsite.
Marsh microseris (*Microseris paludosa*)	—/—/1B.2	Northern coastal scrub	Low: Some scrub habitat exists onsite.
Marsh pea (*Lathyrus palustris*)	—/—/2B.1	Coastal wetland	Very Low: Some marginally suitable wetland habitat exists onsite.
Milo Baker's lupine (*Lupinus milo-bakeri*)	—/—/1B.1	Foothill woodland, valley grassland	None: No serpentine habitat exists onsite.
Morrison's jewelflower (*Streptanthus morrisonii* ssp. *morrisonii*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Mt. St. Helena morning-glory (*Calystegia collina* ssp. *oxyphylla*)	—/—/4.2	Serpentine chaparral	None: No serpentine habitat exists onsite.
Napa blue grass (*Poa napensis*)	FE/SE/1B.1	Chaparral	Very Low: Some suitable woodland habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Napa checkerbloom (*Sidalcea hickmanii* ssp. *napensis*)	—/—/1B.1	Chaparral	Very Low: Some suitable woodland habitat exists onsite.
Napa false indigo (*Amorpha californica* var. *napensis*)	—/—/1B.2	Forest, woodland	Low: Some suitable woodland habitat exists onsite.
Narrow-anthered brodiaea (*Brodiaea leptandra*)	—/—/1B.2	Foothill woodland, grassland	Medium: Some grassland habitat exists onsite.
North Coast semaphore grass (*Pleuropogon hooverianus*)	**—/ST/1B.1**	**Freshwater wetland, vernal pools**	**Medium: Some marginally suitable wetland habitat exists onsite.**
Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*)	—/—/2B.2	Freshwater wetlands	Low: Some wetland or pond habitat exists onsite.
Oval-leaved viburnum (*Viburnum ellipticum*)	**—/—/2B.3**	**Chaparral**	**Low: No chaparral habitat exists onsite.**
Pacific gilia (*Gilia capitata* ssp. *pacifica*)	—/—/1B.2	Coastal prairie	Low: No coastal prairie habitat exists onsite.
Pacific Grove clover (*Trifolium polyodon*)	—/—/1B.1	Grassland, wetland	Low: Some suitable wetland habitat exists onsite.
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	—/—/1B.2	Grassland	Low: Some suitable grassland habitat exists onsite.
Pennell's bird's beak (*Cordylanthus tenuis* ssp. *capillaris*)	**FE/SR/1B.2**	**Chaparral**	**Low: No suitable chaparral habitat exists onsite.**
Perennial goldfields (*Lasthenia californica* ssp. *macrantha*)	—/—/1B.2	Northern coastal scrub	Very Low: Some grassland habitat exists onsite.
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	**—/—/1B.2**	**Parasitic plant; grassland, chaparral**	**Very Low: Typical host plants not known from the property.**
Petaluma popcornflower (*Plagiobothrys mollis* var. *vestitus*)	—/—/1A	Coastal salt marsh	None: No coastal salt marsh habitat exists onsite.
Pink sand verbena (*Abronia umbellata* var. *breviflora*)	—/—/1B.1	Coastal sand dunes	None: No coastal sand dune habitat exists onsite.
Pitkin Marsh lily (*Lilium pardalinum* ssp. *pitkinense*)	**FE/SE/1B.1**	**Freshwater wetlands**	**Low: Some marginally suitable wetland habitat exists in the project area. Nearest known occurrence is somewhere in the USGS Two Rock 7.5 minute quad.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Pitkin Marsh paintbrush (*Castilleja uliginosa*)	FE/SE/1A	Freshwater wetlands	Very Low: No suitable wetland habitat exists onsite.
Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*)	**—/—/1B.2**	**Coastal salt marsh**	**None: No salt marsh habiat exists onsite.**
Point Reyes salty bird's beak (*Chloropyron maritimum* ssp. *palustre*)	—/—/1B.2	Coastal salt marsh	None: No salt marsh habitat exists onsite.
Purple-stemmed checkerbloom (*Sidalcea malviflora* spp. *purpurea*)	—/—/1B.2	Wetlands	Low: Some suitable wetland habitat exists onsite.
Pygmy cypress (*Hesperocyparis pygmaea*)	—/—/1B.2	Closed-cone pine forest, hardpan soils	Very Low: No suitable pygmy forest habitat exists onsite.
Raiche's manzanita (*Arctostaphylos stanfordiana* ssp. *raichei*)	—/—/1B.1	Chaparral	None: No suitable chaparral habitat exists onsite.
Raiche's red ribbons (*Clarkia concinna* spp. *raichei*)	—/—/1B.1	Coastal scrub	Low: Some scrub habitat exists onsite.
Rincon Ridge ceanothus (*Ceanothus confusus*)	—/—/1B.1	Chaparral	None: No suitable chaparral habitat exists onsite.
Rincon Ridge manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens*)	—/—/1B.1	Chaparral	None: No suitable chaparral habitat exists onsite.
Rose leptosiphon (*Leptosiphon rosaceus*)	—/—/1B.1	Coastal scrub	None: No suitable coastal scrub habitat exists onsite.
Round-headed beaked-rush (*Rhynchospora globularis*)	**—/—/2B.1**	**Freshwater wetlands, riparian**	**Low: Some marginally suitable wetland habitat exists onsite.**
Round-leaved filaree (*California macrophylla*)	—/—/1B.2	Foothill grassland	Low: Some grassland habitat exists onsite.
Saline clover (*Trifolium hydrophilum*)	**—/—/1B.2**	**Wetland, riparian**	**Low: Some marginally suitable wetland habitat exists onsite.**
San Joaquin spearscale (*Extriplex joaquinana*)	—/—/1B.2	Shadscale scrub, valley grassland	None: No alkali scrub habitat exists onsite.
Santa Cruz clover (*Trifolium buckwestiorum*)	—/—/1B.1	Coastal prairie	Very Low: Some grassland habitat onsite but species prefers the coast.
Santa Cruz microseris (*Stebbinsoseris decipiens*)	—/—/1B.2	Chaparral	None: No coastal scrub habitat exists onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Santa Rosa horkelia (*Horkelia tenuiloba*)	—/—/1B.2	Freshwater wetland, vernal pools	None: No suitable chaparral habitat exists onsite.
Sebastopol meadowfoam (*Limnanthes vinculans*)	**FE/SE/1B.1**	**Freshwater wetland, vernal pools**	**Very Low: No vernal pool habitat exists onsite.**
Serpentine cryptantha (*Cryptantha dissita*)	—/—/1B.2	Serpentine chaparral	None: No serpentine habitat exists onsite.
Serpentine daisy (*Erigeron serpentinus*)	—/—/1B.3	Chaparral	None: No suitable chaparral habitat exists onsite.
Short-leaved evax (*Hesperevax sparsiflora var. brevifolia*)	—/—/1B.2	Coastal prairie	Very Low: Some grassland habitat exists onsite.
Slender Orcutt grass (*Orcuttia tenuis*)	—/—/1B.1	Freshwater wetlands	None: No suitable wetland habitat exists onsite.
Small-flowered calycadenia (*Calycadenia micrantha*)	—/—/1B.2	Foothill grassland	Low: Some suitable grassland habitat onsite.
Small groundcone (*Kopsiopsis hookeri*)	—/—/2B.3	Redwood forest	Low: Some redwood forest habitat exists onsite.
Soft salty bird's beak (*Chloropyron molle* ssp. *molle*)	FE/ST/1B.2	Coastal salt marsh	None: No salt marsh habitat exists onsite.
Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*)	**FE/—/1B.1**	**Freshwater wetland, vernal pools**	**Low: Some marginally suitable wetland habitat exists onsite.**
Sonoma beardtongue (*Penstemon newberryi* var. *sonomensis*)	—/—/1B.3	Chaparral	Low: Some grassland habitat exists onsite.
Sonoma ceanothus (*Ceanothus sonomensis*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Sonoma spineflower (*Chorizanthe valida*)	**FE/SE/1B.1**	**Coastal prairie**	**Low: Some grassland habitat exists onsite.**
Sonoma sunshine (*Blennosperma bakeri*)	**FE/SE/1B.1**	**Valley grassland, freshwater wetland**	**Low: Some marginally suitable grassland habitat exists onsite.**
Supple daisy (*Erigeron supplex*)	—/—/1B.2	Coastal prairie	Low: Some grassland habitat exists onsite.
Swamp harebell (*Campanula californica*)	**—/—/1B.2**	**Coastal prairie, freshwater wetlands**	**Low: Some marginally suitable wetlands exist on site.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
The Cedars fairy lantern (*Calochortus raichei*)	—/—/1B.2	Hardpan chaparral	None: No suitable chaparral habitat exists onsite.
The Cedars manzanita (*Arctostaphylos bakeri* ssp. *sublaevis*)	—/—/1B.2	Hardpan chaparral	None: No suitable chaparral habitat exists onsite.
Thin-lobed horkelia (*Horkelia tenuiloba*)	**—/—/1B.2**	**Chaparral, forest**	**Low: Some suitable habitat exists onsite.**
Thurber's reed grass (*Calamagrostis crassiglumis*)	—/—/2B.1	Coastal scrub, freshwater wetland	Low: Some suitable scrub habitat exists onsite.
Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*)	—/—/1B.2	Coastal prairie	Low: Some grassland habitat exists onsite.
Two-carpellate Western flax (*Hesperolinon bicarpellatum*)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite.
Two-fork clover (*Trifolium amoenum*)	**FE/—/1B.1**	**Grassland, wetland**	**Medium: Some grassland habitat exists onsite. Nearest occurrence is 1.6 miles W of the site near Freestone.**
Vine Hill ceanothus (*Ceanothus foliosus* var. *vineatus*)	**—/—/1B.1**	**Chaparral**	**None: No suitable chaparral habitat exists onsite.**
Vine Hill clarkia (*Clarkia imbricata*)	FE/SE/1B.1	Chaparral, grassland	None: No suitable chaparral habitat exists onsite.
Vine Hill manzanita (*Arctostaphylos densiflora*)	—/SE/1B.1	Chaparral	None: No suitable chaparral habitat exists onsite.
Watershield (*Brasenia schreberi*)	—/—/2B.3	Pond, wetland	None: No pond habitat exists in the project area.
Western leatherwood (*Dirca occidentalis*)	—/—/1B.2	Foothill woodland, chaparral	Low: Some woodland habitat exists onsite.
White beaked-rush (*Rhynchospora alba*)	—/—/2B.2	Wetlands, riparian	Medium: Some marginally suitable wetland habitat exists onsite.
White flowered rein orchid (*Piperia candida*)	—/—/1B.2	Yellow pine forest	None: No suitable forest habitat exists onsite.
Wolly-headed gilia (*Gilia capitata* ssp. *tomentosa*)	**—/—/1B.1**	**Coastal prairie**	**Low: Some grassland habitat exists onsite.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Wolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*)	—/—/4.2	Vernal pools	None: No vernal pool habitat exists onsite.
Wolly spineflower (*Chorizanthe cuspidata* var. *villosa*)	—/—/1B.2	Coastal dunes	None: No coastal dune habitat exists onsite.
MOSSES, LICHENS & LIVERWORTS			
Angel's hair lichen (*Ramalina thrausta*)	—/—/2B.1	Old growth conifer and hardwood forests	None: No old growth conifer forest habitat exists onsite.
Coastal triquetrella (*Triquetrella californica*)	—/—/1B.2	Forest, woodland	None: No suitable forest habitat exists onsite.
Methuselah's beard lichen (*Dolichousnea longissima*)	—/—/4.2	Old growth conifer and hardwood forests	None: No old growth conifer forest exists onsite.
Slender silver moss (*Anomobryum julaceum*)	—/—/4.2	Rocky substrates in forests	None: No suitable rock habitat exists onsite.
Torren's grimmia (*Grimmia torenii*)	—/—/1B.3	Forest, woodland	Very Low: No suitable woodland habitat exists onsite.
FISH			
Chinook Salmon Coastal California DPS (*Oncorhynchus kisutch*)	FT/SE/—	Freshwater streams, open ocean and estuaries	None: No suitable streams exist onsite.
Coho Salmon Central California Coast ESU (*Oncorhynchus kisutch*)	**FE/SE/—**	**Freshwater streams, open ocean and estuaries**	**None: No suitable streams exist onsite.**
Gualala roach (*Lavinia symmetricus parvipinnis*)	—/SSC/—	Freshwater streams	None: No suitable streams exist onsite.
Longfin smelt (*Spirinchus thaleichthys*)	FT/ST/—	Estuaries and coastal lakes	None: No suitable estuary habitat exists onsite.
Navarro roach (*Lavinia symmetricus navarroensis*)	—/SSC/—	Freshwater streams	None: No suitable streams exist onsite.
Russian River tule perch (*Hysterocarpus traski pomo*)	—/SSC/—	Low gradient rivers	None: No suitable streams exist onsite.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Sacramento perch (*Archoplites interruptus*)	—/SSC/—	Low gradient sloughs and lakes	None: No suitable habitat exists onsite.
Sacramento splittail (*Pogonichthys macrolepidotus*)	—/SSC/—	Low gradient freshwater streams	None: No suitable streams exist onsite.
Steelhead Central California Coast DPS (*Oncorhynchus mykiss irideus*)	**FT/—/—**	**Freshwater streams, open ocean and estuaries**	**None: No suitable streams exist onsite.**
Tidewater goby (*Eucyclogobius newberryi*)	FE/SSC/—	Brackish coastal lagoons and streams	None: No brackish coastal lagoons exist onsite.
AMPHIBIANS & REPTILES			
California giant salamander (*Dicamptodon ensatus*)	**—/SSC/—**	**Wetlands and riparian areas**	**Medium: Some suitable wetland habitat exists onsite. Nearest occurrence is 1.5 mi W of the project parcel near Freestone.**
California red-legged frog (*Rana draytonii*)	**FT/SSC/—**	**Vernal pools, seasonal pools, stock ponds, and associated grasslands**	**None: No suitable ponds or pools for breeding. Some poor quality estivation habitat exists onsite. Nearest occurrence is somewhere in the USGS Two Rock 7.5-minute quadrangle, that includes the project parcel.**
California tiger salamander (*Ambystoma californiense*)	**FE/ST/—**	**Ponds, streams, drainages, and associated uplands**	**Very Low: No seasonal ponds for breeding. Some poor quality estivation habitat exists onsite.**
Foothill yellow-legged frog (*Rana boylii*)	**—/ST/—**	**Wetlands, riparian, streams and ponds**	**Medium: Insufficient flow in watercourse to maintain breeding habitat. Some potential estivation habitat exists onsite. Nearest occurrence is 1.5 mi W of the project parcel near Freestone.**
Red bellied newt (*Taricha rivularis*)	—/SSC/—	Woodland streams, riparian corridors	Low: Some suitable habitat exists onsite.
Western pond turtle (*Emys marmorata*)	**—/SSC/—**	**Slow-moving creeks, streams, ponds, rivers, ditches**	**None: No suitable pond habitat exists onsite. Nearest occurrence is 1.3 mi NW of the project parcel near Bodega Highway.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
INVERTEBRATES			
Barr's amphipod (*Stygobromus cherylae*)	—/SSC/—	Subterranean aquatic habitats	None: No suitable aquatic habitat onsite.
Behren's silverspot butterfly (*Speyeria zerene behrensii*)	FE/SSC/—	Coastal prairie	None: Requires blue violet to reproduce; none onsite.
Blennosperma vernal pool andrenid bee (*Andrena blennospermatis*)	—/SSC/—	Upland areas near vernal pools	None: No vernal pool habitat exists onsite.
California brackishwater snail (*Tryonia imitator*)	—/SSC/—	Brackish wetlands	Low: Some wetland habitat exists onsite.
California floater (*Anodonta californiensis*)	**—/SSC/—**	**Freshwater ponds, streams**	**None: No suitable stream habitat exists onsite. Nearest occurrence is 1.5 mi W of the project parcel near Freestone.**
California freshwater shrimp (*Syncaris pacifica*)	**FE/SE/—**	**Freshwater ponds, streams**	**Medium: Some marginally suitable stream habitat exists on the parcel, but not in the project area. Nearest occurrence is 0.7 mi N of the parcel in unnamed tributary to Atascadero Creek.**
California linderiella (*Linderiella occidentalis*)	—/SSC/—	Vernal pools	None: No suitable vernal pool habitat exists onsite.
Crotch bumble bee (*Bombus crotchii*)	—/SSC/—	Grassland and chaparral	Very Low: Some grassland habitat exists onsite, although species is not known from near the coast.
Giuliani's dubiraphian riffle beetle (*Dubiraphia giulianii*)	—/SSC/—	Freshwater streams	Very Low: No suitable habitat in the project area.
Leech's skyline diving beetle (*Hydroporus leechi*)	—/SSC/—	Freshwater ponds	None: No suitable pond habitat exists onsite.
Myrtle silverspot butterfly (*Speyeria zerene myrtleae*)	FE/SSC/—	Coastal prairie, chaparral with *Viola* plants	None: Requires western dog violet for reproduction; none observed onsite.
Monarch butterfly California overwintering Population #1 (*Danaus plexippus*)	—/SSC/—	Large trees required for roosting	Medium: Some suitable Eucalyptus trees for roosting exist onsite.
Obscure bumble bee (*Bombus caliginosus*)	**—/SSC/—**	**Grassland, foothill woodland, chaparral**	**Medium: Some grassland habitat exists onsite.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Opler's longhorn moth (*Adela oplerella*)	—/SSC/—	Usually associated with *Platystemon* (creamcups)	Very Low: No suitable host plants observed onsite.
Oregon floater (*Anodonta oregonensis*)	**—/SSC/—**	**High order freshwater streams**	**None: No suitable stream habitat exists onsite. Nearest occurrence is 1.5 mi W of the project parcel near Freestone.**
Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)	—/SSC/—	Freshwater ponds	None: No suitable pond habitat exists onsite.
Sonoma arctic skipper (*Carterocephalus palaemon magnus*)	—/SSC/—	Grasslands with suitable host plants	Low: Some suitable grassland habitat onsite.
Sonoma zerene fritillary (*Speyeria zerene sonomensis*)	—/SSC/—	Grasslands and meadows with *Viola* plants	Low: Some suitable grassland habitat onsite.
Tomales isopod (*Caecidotea tomalensis*)	—/SSC/—	Ponds and streams	None: No pond or stream habitat exists onsite.
Western bumblebee (*Bombus occidentalis*)	**—/SSC/—**	**Grassland**	**Medium: Some grassland habitat exists onsite. Nearest occurrence is 1.5 mi W of the project parcel near Freestone.**
Western ridged mussel (*Gonidea angulata*)	—/SSC/—	Freshwater creeks and streams	None: No suitable stream habitat exists onsite.
BIRDS			
American perigrine falcon (*Falco peregrinus anatum*)	—/SSC/—	Forages in open grasslands, nests in trees	Very Low: Some nesting and foraging habitat exists onsite.
Bald eagle (*Haliaeetus leucocephalus*)	—/SSC/—	Nests in forests, forages over lakes and streams.	Very Low: Some marginally suitable nesting habitat exists onsite.
Bank swallow (*Riparia riparia*)	FE/SE/—	Typically found near lakes and streams	None: No suitable stream habitat exists onsite.
Black swift (*Cypseloides niger*)	—/SSC/—	Cliff faces near water	None: No suitable stream habitat exists onsite.
Burrowing owl (*Athene cunicularia*)	**—/SSC/—**	**Grasslands with ground squirrel burrows**	**Very Low: No suitable grassland habitat exists onsite.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
California black rail (*Laterallus jamaicensis coturniculus*)	FE/SE/—	Coastal salt marshes and mudflats	None: No suitable salt marsh habitat exists onsite.
California horned lark (*Eremophila alpestris actia*)	—/SSC/—	Herbaceous vegetation, chaparral	Low: Some suitable habitat exists onsite.
Cooper's hawk (*Accipiter cooperii*)	—/WL/—	Forages over open grassland	Low: Some suitable foraging habitat exists onsite. Some suitable nesting habitat onsite.
Ferruginous hawk (*Buteo regalis*)	—/SSC/—	Forages over open grassland, nests in old-growth trees	Low: Some suitable foraging habitat exists onsite. Some suitable nesting habitat onsite.
Golden eagle (*Aquila chrysaetos*)	—/SSC/—	Forages over open grassland, nests in old-growth trees	Low: Some suitable foraging habitat exists onsite. Some suitable nesting habitat.
Grasshopper sparrow (*Ammodramus savannarum*)	—/SSC/—	Forages over open grassland	Low: Some suitable foraging habitat exists onsite.
Great blue heron (*Ardea herodias*)	—/SSC/—	Nests in trees, forages in wetlands and grasslands	Very Low: Some marginal grassland foraging habitat exists onsite. Some suitable nesting habitat onsite.
Great egret (*Ardea alba*)	**FE/SE/—**	**Nests in trees, forages in wetlands and grasslands**	**Low: Some marginal habitat exists onsite for foraging. Some suitable nesting habitat onsite.**
Marbled murrelet (*Brachyramphus marmoratus*)	FT/SE/—	Old growth forest	None: No suitable old growth forest habitat exists.
Northern goshawk (*Accipiter gentilis*)	—/SSC/—	Old growth forest	Very Low: Some marginally suitable forest habitat exists onsite. Species prefers high elevations.
Northern spotted owl (*Strix occidentalis*)	FT/ST/—	Nests primarily in old growth forest	Low: Some marginally suitable forest habitat exists onsite although species not known from within 5 miles.
Osprey (*Pandion haliaetus*)	—/WL/—	Areas with fish	Low: Some marginal nesting habitat exists onsite. No suitable foraging habitat onsite.
Prairie falcon (*Falco mexicanus*)	—/SSC/—	Forages over grasslands	Low: Some suitable nesting and foraging habitat exists onsite.
Purple martin (*Progne subis*)	FE/SE/—	Insectivorous, nests in cavities	Low: No suitable nesting habitat exists onsite. Some suitable foraging habitat exists.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Ridgway's rail (*Rallus obsoletus obsoletus*)	FE/SE/—	Mudflats and tidal sloughs	None: No suitable tidal habitat exists onsite.
Salt marsh common yellowthroat (*Geothlypis trichas sinuosa*)	—/SSC/—	Forages in grasslands and nests in dense freshwater marshes	Very Low: No suitable nesting or foraging habitat exists onsite.
San Pablo song sparrow (*Melospiza melodia samuelis*)	—/SSC/—	Marsh and grassland especially near SF Bay	Very Low: No suitable habitat exists onsite.
Sharp-shinned hawk (*Accipiter striatus*)	—/SSC/—	Forest and woodland	Very Low: Some marginal nesting and foraging habitat exists onsite.
Swainson's hawk (*Buteo swainsoni*)	—/SSC/—	Forages in open grasslands, nests in trees	Very Low: Some marginal nesting and foraging habitat exists onsite.
Tricolored blackbird (*Agelaius tricolor*)	**—/SSC/—**	**Forages in grasslands and nests in dense freshwater marshes**	**Medium: Some marginal nesting and foraging habitat exists onsite.**
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	—/SE/—	Woodland, riparian	Very Low: No suitable nesting habitat exists. Some suitable foraging habitat exists.
White-tailed kite (*Elanus leucurus*)	—/CFP/—	Prefers to nest in marshes adjacent to deciduous forests	Low: Some suitable nesting and foraging habitat exists onsite.
Yellow breasted chat (*Icteria virens*)	—/SSC/—	Dense shrubby growth, farmland	Very Low: Some nesting and foraging habiat onsite.
Yellow rail (*Coturnicops noveboracensis*)	—/SSC/—	Breeds in marshes, forages in wet meadows	None: No suitable marsh habiat exists onsite.
Yellow warbler (*Coturnicops noveboracensis*)	—/SSC/—	Riparian, shrubland, farmland	Low: Some suitable scrub habitat onsite.
MAMMALS			
American badger (*Taxidea taxus*)	**—/SSC/—**	**Open grassland habitats with plenty of prey**	**Low: Some potential den habiat exists in the riparian corridor. Nearest occurrence is 1.6 mi W of the project parcel near Freestone.**
Big free-tailed bat (*Nyctinomops macrotis*)	—/SSC/—	Forages over open areas, roots in trees or caves	None: Some suitable foraging habitat. No suitable roosts.

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Fisher (*Pekania pennanti*)	—/SSC/—	Forages and breeds primarily in forests	None: No suitable forest habitat exists onsite.
Fringed myotis (*Myotis thysanodes*)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	Very Low: Some suitable foraging habitat. No suitable roosts in the project area.
Hoary bat (*Lasiurus cinereus*)	—/SSC/—	Forages over open areas, roots in trees or caves at high altitude	Low: Foraging limited to high altitudes. No suitable roosts in the project area.
Long-eared myotis (*Myotis evotis*)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	Very Low: Some suitable foraging habitat. No suitable roosts in the project area.
Long-legged myotis (*Myotis volans*)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	None: Some foraging habitat. No suitable roosts.
North American porcupine (*Erethizon dorsatum*)	**—/SSC/—**	**Require rocky areas or trees for dens, abundant open space for foraging**	**Medium: Some suitable foraging and den habitat exists onsite.**
Pallid bat (*Antrozous pallidus*)	—/SSC/—	Common in open dry habitats with rocky areas for roosting	Low: Some foraging habitat exists. Some suitable roosts in the project area.
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE/SE/—	Salt marshes	None: No suitable salt marsh habitat exists onsite.
Silver haired bat (*Lasionycteris noctivagans*)	—/SSC/—	Nocturnal, migratory, solitary, roosts in tree cavities	Low: Some suitable trees exist for roosting. Some foraging habitat exists.
Sonoma tree vole (*Arborimus pomo*)	**—/SSC/—**	**Old growth Douglas fir canopies**	**Medium: Some suitable Douglas fir forest habitat exists onsite. Nearest occurrence is 1.5 mi W of the project parcel near Freestone.**
Townsend's big-eared bat (*Corynorhinus townsendii*)	—/SSC/—	Hibernate in mines or caves, roost in man made structures and caves	Low: Few man-made structures exist suitable for roosting. Some habitat for foraging.
Western red bat (*Lasiurus blossevillii*)	**—/SSC/—**	**Forages over open areas, roots in trees or caves**	**Low: Some marginal roosting and foraging habitat onsite.**

Taxon	Status[1] Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Yuma myotis (*Myotis yumanensis*)	—/SSC/—	Forages over open areas, roots in trees or caves	Very Low: No suitable nesting habitat exists, some suitable foraging habitat exists.
HABITATS			
Coastal & Valley Freshwater Marsh (CVFM)	—	—	None: No marsh habitat exists onsite.
Coastal Brackish Marsh (CVFM)	—	—	None: No brackish marshes exist onsite.
Northern Coastal Salt Marsh (NCSM)	—	—	None: No salt marsh habitat exists onsite.
Northern Hardpan Vernal Pool (NHVP)	—	—	None: No hardpan vernal pool habitat exists onsite.
Northern Vernal Pool (NVP)	—	—	None: No vernal pool habitat exists onsite.
Sycamore Alluvial Woodland (SAW)	—	—	None: No woodland habitat exists onsite.
Valley Needlegrass Grassland (VNG)	—	—	Low: Some grassland habitat exists onsite.
Valley Oak Woodland (VOW)	—	—	None: No valley oaks exist onsite.
Valley Sink Scrub (VSS)	—	—	None: No sink habitat exists onsite.

[1] Status:

Federal
FE = Federally Endangered Species
FT = Federally Threatened Species

State
SE = State Endangered Species
ST = State Threatened Species
SSC = California Species of Special Concern
CFP = California Fully Protected Species

CNPS (applies to plants only)
List 1B = plants considered rare, threatened, or endangered in California and elsewhere
List 2B = plants rare, threatened or endangered in California, but more common elsewhere
List 3 = plant is likely rare but more information is required
List 4 = plants of limited distribution

[2] USFWS

APPENDIX B: STREAM CLASSIFICATION CRITERIA

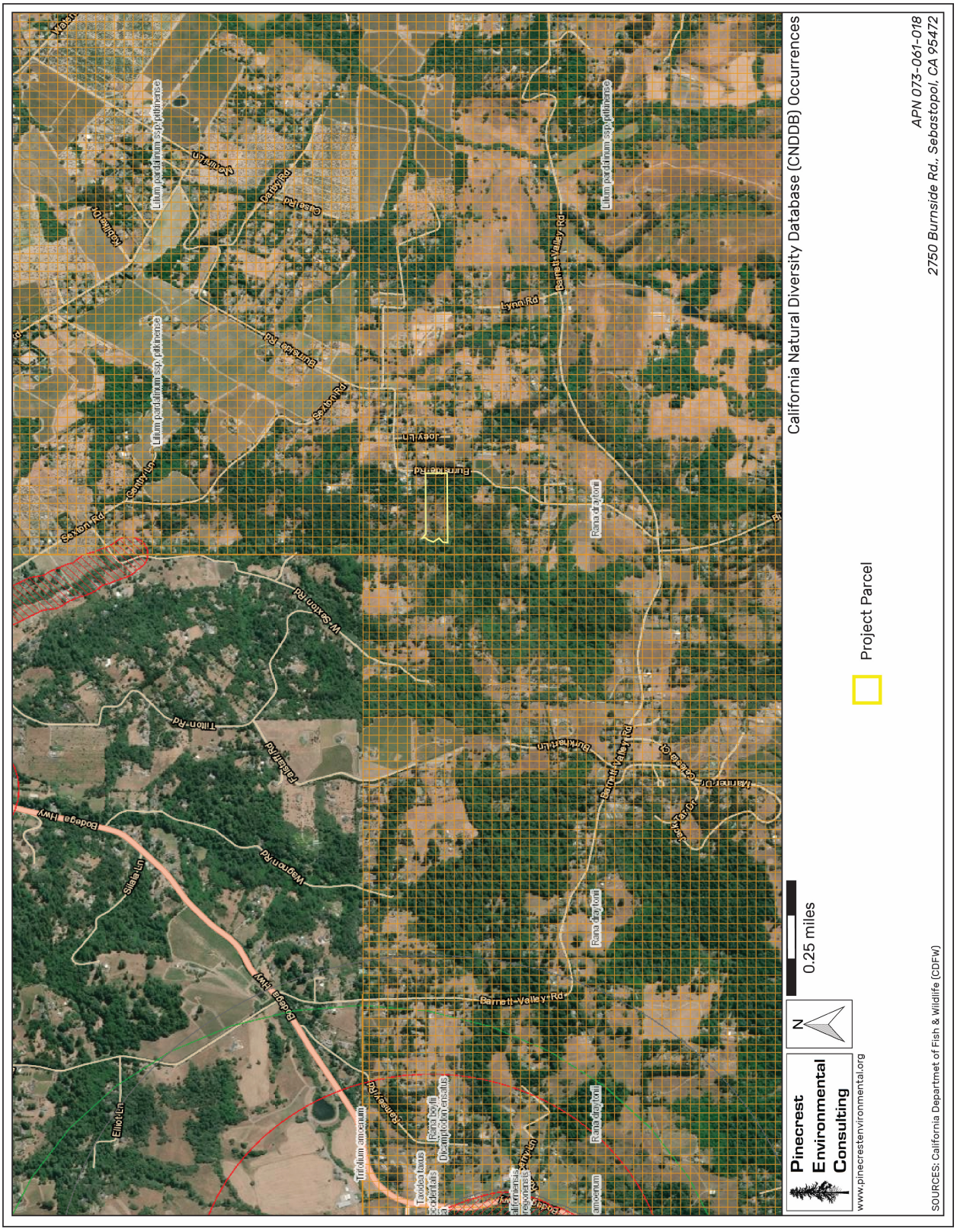
The following stream classification criteria were copied form the California Department of Forestry & Fire Protection *Forest Practice Rules* (CALFIRE 2017) and is widely used by many state and local agencies. Most state and local jurisdictions require setbacks of 50, 100, and 150 feet from Class III, II, and I streams, respectively, although greater setbacks may be required in some jurisdictions.

Watercourse – a natural or artificial channel through which water flows.

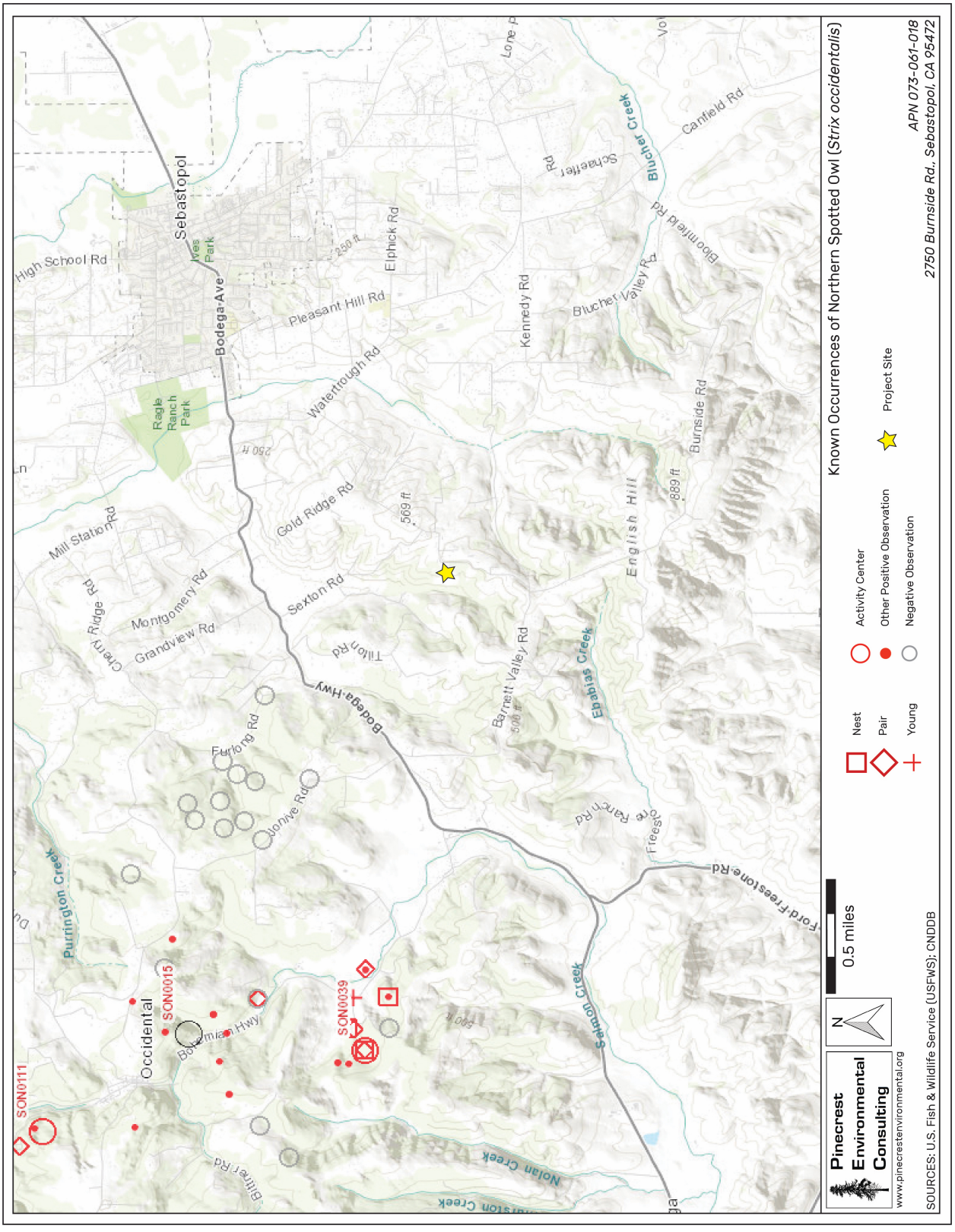
- Perennial watercourse (Class I*):
  1. In the absence of diversions, water is flowing for more than nine months during a typical year,
  2. Fish always or seasonally present onsite or includes habitat to sustain fish migration and spawning, and/or
  3. Spring: an area where there is concentrated discharge of ground water that flows at the ground surface. A spring may flow any part of the year. For the purpose of this Policy, a spring does not have a defined bed and banks.
- Intermittent watercourse (Class II*):
  1. In the absence of diversions, water is flowing for three to nine months during a typical year,
  2. Provides aquatic habitat for non-fish aquatic species,
  3. Fish always or seasonally present within 1,000 feet downstream, and/or
  4. Water is flowing less than three months during a typical year and the stream supports riparian vegetation.
- Ephemeral watercourse (Class III*): In the absence of diversion, water is flowing less than three months during a typical year and the stream does not support riparian vegetation or aquatic life. Ephemeral watercourses typically have water flowing for a short duration after precipitation events or snowmelt and show evidence of being capable of sediment transport.
- Other watercourses (Class IV*): Class IV watercourses do not support native aquatic species and are man-made, provide established domestic, agricultural, hydroelectric supply, or other beneficial use.

*Except where more restrictive, stream class designations are equivalent to the Forest Practice Rules Water Course and Lake Protection Zone definitions (California Code of Regulations, title 14, Chapter 4. Forest Practice Rules, Subchapters 4, 5, and 6 Forest District Rules, Article 6 Water Course and Lake Protection).

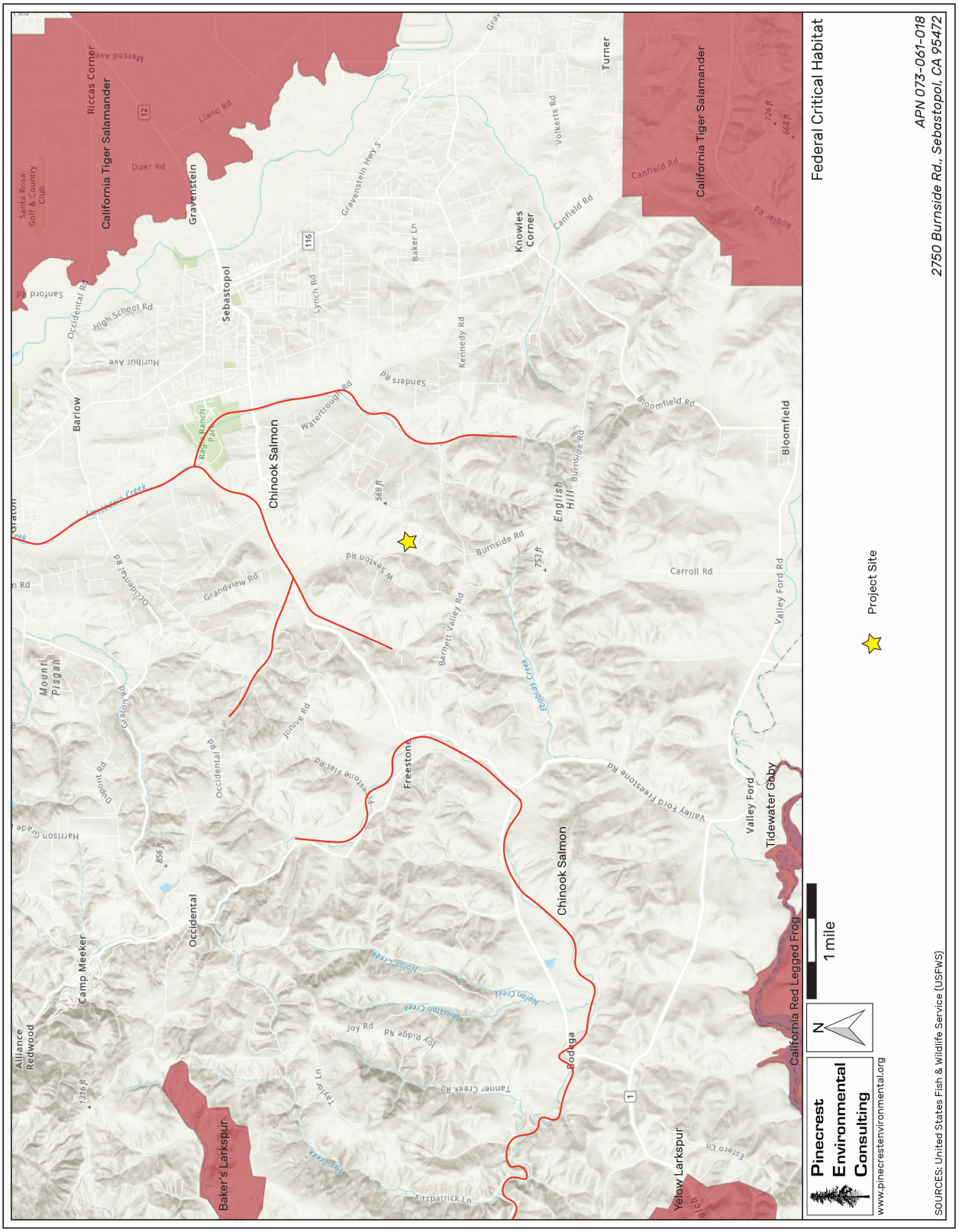
APPENDIX C: CNDDB OCCURRENCES MAP



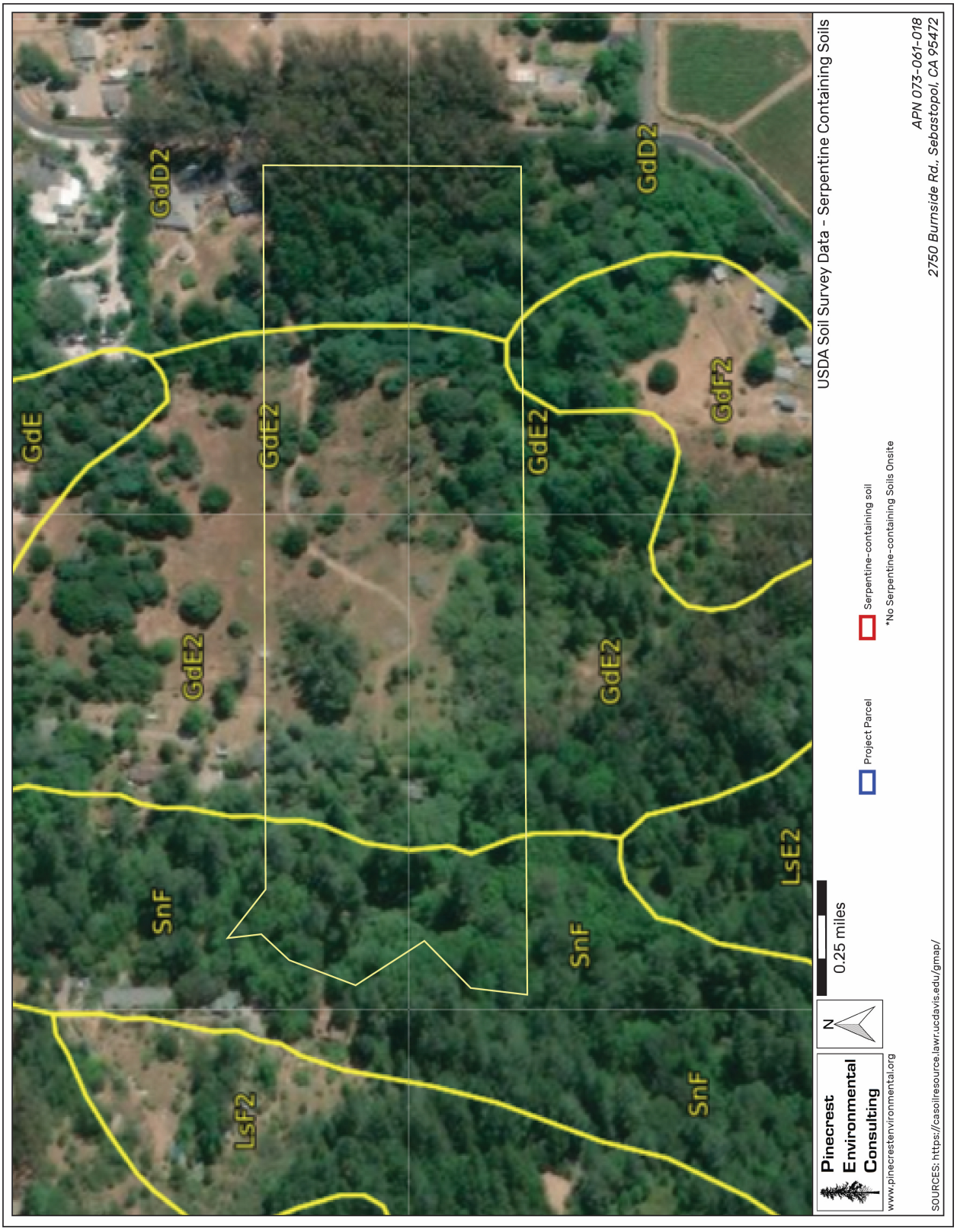
APPENDIX D: NSO OCCURRENCES MAP



APPENDIX E: REGIONAL CRITICAL HABITAT MAP



APPENDIX F: SOILS MAP



APPENDIX G: CANNABIS CULTIVATION BEST MANAGEMENT PRACTICES

Best management practices (BMPs) are designed to prevent, minimize, and control the discharge of waste and pollutants associated with site operations and maintenance for the aforementioned project. Many of these BMPs are considered enforceable conditions under State Water Resources Control Board *Cannabis* General Order No. WQ 2019-0001-DWQ.

G.1 CANNABIS CULTIVATION

- Pesticide and fertilizer storage facilities shall be located outside of the riparian corridor setbacks for structures.
- Pesticide and fertilizer storage facilities shall not be located within 100 feet of a wellhead, or within 50 feet of identified wetlands.
- Pesticide and fertilizer storage facilities shall be adequate to protect pesticide and fertilizer containers from the weather.
- Store all bags and boxes of pesticides and fertilizers off the ground on pallets or shelves.
- If the structure does not have an impermeable floor, store all liquid pesticides and fertilizers on shelves capable of containing spills or provide appropriate secondary containment.
- Routinely check for leaks and spills.
- Have spill cleanup kit onsite to be able to respond to any leaks or spills.
- Inspect planting stock for pests and diseases prior to planting.
- Avoid planting stock with pests and disease and notify the supplier of the planting stock of the infestation.
- Comply with all pesticide laws and regulations as enforced by the California Department of Pesticide Regulation and County Agricultural Commissioner.
- For pesticides with the signal word CAUTION that have listed food uses, comply with all pesticide label directions as they pertain to personal protective equipment, application method, and rate, environmental hazards, longest reentry intervals and greenhouse and indoor use directions.
- For all other pesticides, use must comply with all label requirements including site and crop restrictions.
- Prior to the use of any registered pesticide on *Cannabis*, Operator Identification Number should be obtained from the County Agricultural Commissioner if required.
- Submit monthly pesticide use reports to the County Agricultural Commissioner if required.
- Prior to applying fertilizers, evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over fertilization.

- Apply fertilizers at label rates and no higher.
- Do not apply fertilizers in a way that will result in runoff that may contaminate ground or surface water or escape via airborne drift or fugitive dust.
- Observe riparian corridor setbacks for agricultural cultivation as applicable. These shall be maintained as "no touch" areas and demarcated with appropriate flagging.
- The removal of vegetation is prohibited within riparian setback areas.
- No equipment, vehicles, or other materials shall be stored in the riparian setback areas.
- Composting areas shall not be located in the riparian setback areas.
- Irrigation must be conducted in a manner that does not result in runoff from the cultivated area.
- Any water tanks or storage facilities must obtain permits from the local City or County planning department where required.
- The use of membrane based water bladders is prohibited.
- If using an irrigation system, inspect for and repair leaks prior to planting each year and continuously during the season.
- Irrigation systems shall be equipped with a backflow prevention devices and shutoff valves.
- Recycle or properly dispose of all plastic bags, containers, and irrigation materials.
- Properly dispose of green waste in a manner that does not discharge pollutants to a watercourse. This may be accomplished by composting, chipping, and/or shredding.
- The method of green waste disposal must be documented.
- Used growth medium (soil and other organic medium) shall be handled to minimize or prevent discharge of soil and residual nutrients and chemicals to watercourses. Proper disposal could include incorporating into garden beds, spreading on a stable surface and re-vegetating, storage in watertight dumpsters, or covering with tarps or plastic sheeting prior to proper disposal.
- The method of disposal of growth medium must be documented.
- Compost piles are to be located outside of riparian setbacks for agricultural cultivation and in a manner that will not discharge pollutants to a watercourse.
- If necessary, construct a berm or install fiber roll around compost area to prevent runoff or use straw wattles around perimeter.
- Cover compost piles with tarp or impermeable surface prior to fall rains and continuously throughout the rainy season.
- Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
- Avoid soil disturbance between November 1 and April 15 and during times of active precipitation.
- All exposed and disturbed soil must be covered with a minimum of 2 inches of mulch, such as straw, bark, wood chips, etc., by November 15. Alternatively, establish a thick cover crop over disturbed areas composed of native species.
- Erosion control materials shall be available on site at all times in the form of straw, mulch, wattles, silt fencing, erosion control fabrics, sand bags, or other materials adequate to cover areas of disturbed soil or incipient erosion events.

- In the event of a forecast storm event likely to produce runoff, apply mulch, wattles, or other erosion prevention measures to the disturbed areas prior to rain event.
- Any grading or drainage conducted as part of site preparation shall have permits from local County or City agencies if required.

G.2 EROSION & SEDIMENT CONTROL

- Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season or any predicted rain events.
- Any continuing, approved project work conducted after October 15 shall have erosion control measures completed and up-to-date.
- All erosion control measures shall be inspected daily during severe rain events.
- Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
- Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
- Native species appropriate to the local habitat shall be used for all revegetation purposes. Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
- Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
- The disturbed area will be minimized at all times to only that which is essential for the completion of the project.
- Provide temporary cover over disturbed areas that are not currently being worked on.
- Heavy equipment shall not be used in flowing water.
- Use of heavy equipment shall be avoided or minimized in a channel bottom with rocky or cobbled substrate.
- Heavy equipment shall not introduce chemicals or foreign sediment to the channel (e.g., remove mud from tracks or cover channel work area with plastic sheeting prior to heavy equipment entry).
- When heavy equipment is used, any woody debris and stream bank or streambed vegetation disturbed shall be replaced to a pre-project density with native species appropriate to the site.
- When possible, existing ingress or egress points shall be used or work shall be performed remotely from the top of the creek banks.
- Divert runoff away from unprotected slopes or loose soils using a combination of mats, geotextiles, silt fencing, wattling, check dams, sediment basins, vegetated buffers, or rock armor.
- Deploy appropriate erosion control measures such as silt fencing or straw wattles around all temporary exposed piles or soil or surface disturbances.

- All temporary exposed piles or soil or surface disturbances shall have tarping and sand bags or other stabilization materials deployed in order to prevent discharge of sediments in the event of a rain or wind event.
- Geotechnical fabric shall be deployed on all exposed dirt surfaces with a slope of greater than 15% and staked in place during ground disturbing activities, and silt fencing deployed on slopes of greater than 15% where appropriate.
- Sand bags, straw bales, or other devices shall be placed at appropriate locations near and alongside the roadsides and swales in anticipation of large storm events.
- Bioswales and cultivation areas including parking areas shall be maintained free of trash including empty soil and pesticide or fertilizer containers.
- Locations of sediment sources shall be identified during rain events and mitigated where appropriate.
- Protect ditch inlets and outlets from erosion using rock armor.
- Silt fencing shall be installed downstream of rock piles, stockpiles, and temporary soils storage areas.
- Desilting or retention basins shall be installed if the capacity of the natural percolation exceeds the inputs during routine storm events.
- Sediment traps shall be used on all exposed driveway surfaces where natural vegetation is not able to be established.
- Exposed unvegetated surfaces will be graveled where appropriate.
- Rock placed for slope protection shall be the minimum necessary to avoid erosion, and shall be part of a design that provides for native plant revegetation and minimizes bank armoring.
- Soil exposed as a result of project work, soil above rock riprap, and interstitial spaces between rocks shall be revegetated with native vegetation by live planting, seed casting, or hydroseeding prior to the rainy season of the year work is completed.
- Avoidance of earthwork on steep slopes and minimization of cut/fill volumes, combined with proper compaction, shall occur to ensure the area is resilient to issues associated with seismic events and mass wasting. If cracks are observed, or new construction is anticipated, consultation with a qualified professional is recommended.
- Culvert fill slopes shall be constructed at a 2:1 slope or shall be armored with rock.
- If it is necessary to conduct work in or near a live stream, the work space shall be isolated to avoid project activities in flowing water.
- Any spoils associated with site maintenance shall be placed in a stable location where it cannot enter a watercourse.
- Sidecasting shall be minimized and shall be avoided on unstable areas or where it has the potential to enter a watercourse.
- Entrance to the project site shall be maintained in a condition that will prevent tracking or flowing of sediment into the public right-of-way.
- All sediment spilled, dropped, washed, or tracked onto the public right-of-ways shall be removed immediately.
- When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-ways.

- When wheel washing is required, it shall be done in an area stabilized with crushed stone that drains into a sediment trap fitted with appropriate erosion control measures.
- To control surface water runoff in and around cultivation areas use fiber rolls or wattling and stake appropriately and perpendicular to the flow path.
- Cover crops should be utilized on all exposed slopes that are not able to be protected by other means.
- Cover crops should be native species as described in the associated biological resources report.
- Rip compacted soils prior to placing spoils to prevent the potential for ponding under the spoils that could result in spoil site failure and subsequent sedimentation.
- Compact and contour stored spoils to mimic the natural slope contours and drainage patterns to reduce the potential for fill saturation and failure.
- Ensure that spoil materials are free of woody debris, and not placed on top of brush, logs or trees.
- Inspect all roads and culverts regularly for blockages.

G.3 WATER USE & POLLUTION

- Ensure that all appropriate water rights permits are filed with the State Water Resources Control Board.
- Notify the California Department of Fish and Wildlife by submitting a Lake and Streambed Alteration (LSA) notification package if the proposed activities involve substantial diversion from or alteration of the bed or bank of a stream or other waterbody.
- Ensure that all water storage features are permitted from the Department of Water Rights if necessary.
- All refueling and pesticide and chemical storage and transfer shall occur greater than 100 feet away from any swales, creeks, or natural areas.
- All refueling and pesticide and chemical storage and transfer shall occur on top of an impermeable metal or other fabric mat that is no less than 2 inches high on all sides and capable of completely containing any spillage.
- Concrete truck and other vehicles shall not be washed out in natural areas or directly onto soil and shall be washed out into a metal or other impermeable basin and disposed of properly such that no water is discharged to the soil.
- All waste shall be kept in plastic drums with tight fitting lids so that water is not able to make contact with the contents and potentially leach to the environment.
- All pesticide sprays shall occur on windless nights for outdoor facilities.
- Chemical or fertilizer wastes shall never be disposed of into swales or creeks and shall be contained inside closed-roof facilities and designated with appropriate labeling until it is possible to dispose of properly.
- Septic leach fields and graywater mulch fields shall be maintained free of large vegetation and not used for aboveground storage that may impact their proper functioning.

- Chemical contamination (fuel, grease, oil, hydraulic fluid, solvents, etc.) of water and soils is prohibited during routine equipment operation and maintenance.
- The use or storage of petroleum-powered equipment shall be accomplished in a manner that prevents the potential release of petroleum materials into waters of the state (Fish and Game Code 5650).
- Schedule excavation and grading activities for dry weather periods.
- Designate a contained area for equipment storage, short-term maintenance, and refueling. Ensure it is located at least 50 feet from waterbodies.
- Inspect vehicles for leaks and repair immediately.
- Clean up leaks, drips and other spills immediately to avoid soil or groundwater contamination.
- Conduct major vehicle maintenance and washing offsite.
- Ensure that all spent fluids including motor oil, radiator coolant, or other fluids and used vehicle batteries are collected, stored, and recycled as hazardous waste offsite.
- Ensure that all construction debris is taken to appropriate landfills and all sediment disposed of in upland areas or offsite, beyond the 100-year floodplain.
- Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. If necessary for dust control, use only a minimal amount of water.
- Sweep up spilled dry materials immediately.
- Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill.
- Spoils shall not be placed or stored in locations where soils are wet or unstable, or where slope stability could be adversely affected.
- Do not locate spoil piles in or immediately adjacent to wetlands and watercourses.
- Store spoil piles in a manner (e.g. cover pile with plastic tarps and surround base of pile with straw wattle) or location that would not result in any runoff from the spoil pile ending up in wetlands and watercourses.
- Keep temporary disposal sites out of wetlands, adjacent riparian corridors, and ordinary high water areas as well as high risk zones, such as 100-year floodplain and unstable slopes.
- Conduct operations on a size and scale that considers available water sources and other water use and users in the planning watershed.
- Implement water conservation measures such as rainwater catchment systems, drip irrigation, mulching, or irrigation water recycling where possible.
- Hauled water utilized for irrigation shall be documented via receipt or similar, and show the date, name, and license plate of the water hauler, and the quantity of water purchased.
- If using a water storage tank, do not locate the tank in a flood plain or next to equipment that generates heat. Locate the tank so it is easy to install, access, and maintain.
- Vertical tanks should be installed according to manufacturer's specifications and placed on firm, compacted soil that is free of rocks/sharp objects and capable of bearing the weight of the tank and its maximum contents.
- Install float valves on tanks to prevent them from overflowing.

- Place proper lining or sealing in ponds to prevent water loss.

G.4 ROAD MAINTENANCE & GENERAL CONSTRUCTION

- Always limit work to the appropriate work date windows considering wet weather, migratory bird and other biological and environmental constrains that may be placed on the project.
- Proper design and location of roads and other features is critical to ensuring that a road or other feature be adequately drained and is best accomplished through consultation with a qualified professional.
- Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
- If inspection identifies surface rills or ruts, then surfacing and drainage likely needs maintenance. Consultation should be made with a licensed professional to design appropriate erosion control strategies.
- Design of roads should allow for sheet flow of water and use water bars and rolling dips to break up slope length.
- Vehicle speed shall be kept to a maximum of 10 mph while onsite to minimize dust generation.
- All unvegetated and unpaved roadways and vehicle turnarounds shall be graveled to a depth of not less than 1" in order to prevent dust and sediment entrainment.
- Applicant will use geotechnical fabric or similar materials on exposed slopes, and distribute weed-free straw mulch wherever possible on exposed surfaces on the perimeter of all graded roads and graveled areas.
- Roads and the berms alongside all roads shall be maintained free of headcuts, gullies, stutter bumps, and other erosion features capable of discharging sediment to adjacent grassland areas.
- Roads will be graveled with clean rock whenever required to prevent dust and sediment erosion during the wet season.
- Whenever possible, road maintenance activities shall be performed from May 1 to October 15.
- Work performed outside of this window should take extra precautions for winter weather erosion control prevention beyond that which is described in this Plan.
- A 48 hour advance forecast for rain shall trigger a temporary cessation of work, and all soils piles will need to be covered and secured with sandbags or other materials.
- Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
- Whenever feasible, finished grades shall not exceed 1.5:1 side slopes. In circumstances where final grades cannot achieve 1.5:1 slope, additional erosion control or stabilization methods shall be applied as appropriate for the project location.
- Spoils and excavated material not used during project activities shall be removed and placed outside of 100-year floodplains.
- Upon completion of grading, slope protection of all disturbed sites shall be provided prior to the rainy season through a combination of permanent vegetative treatment, mulching, geotextiles, and/or rock, or equivalent.

- Position vehicles and other apparatus so as to not block emergency vehicle access.
- After construction is complete, all storm drain systems and culverts shall be inspected and cleared of accumulated sediment and debris.
- Sediment barriers including wattles and silt fencing should be checked for sediment accumulation following each significant rainfall and sediment removed or the feature replaced as needed.
- Road drainage shall be discharged to a stable location away from a watercourse.
- Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream.
- Within areas with potential to discharge to a watercourse (i.e. within riparian areas of at least 200 feet of a stream) road surface drainage shall be filtered through vegetation, slash, or other appropriate material or settled into a depression with an outlet with adequate drainage.

G.5 SWALE & VEGETATION MANAGEMENT

- The work area shall be restored to pre-project work condition or better.
- Any stream bank area left barren of vegetation as a result of cleanup/restoration activities shall be stabilized by seeding, replanting, or other means with native trees, shrubs, and/or grasses appropriate to the site prior to the rainy season in the year work was conducted.
- Ensure that vegetated swales are properly formed, allow moderate velocity water passage without causing sediment entrainment, and are otherwise functioning properly.
- Create and expand vegetated bioswales where necessary, should additional construction or road maintenance be required, in order to maintain flow without scour.
- All bioswales and other drainage features requiring revegetation will be seeded with native vegetation and lawns and hedgerows maintained in good health and watered in dry years.
- Vegetation including grasses shall be mowed as necessary to create fire breaks and to prevent the accumulation of fuels that would be able to sustain a ground fire.
- All vegetation shall be surveyed on foot once a year by staff and new outbreaks of any invasive weeds identified by the California Invasive Plant Council as noxious or invasive to be removed by the owner or qualified landscaping professionals.
- Channels and swales that show evidence of overland flow and scour (e.g. bare of vegetation) shall be seeded with native grasses such as *Stipa pulchra*, *Hordeum brachyantherum*, *Elymus glaucus*, and *Bromus carinatus*, and kept vegetated at all times.
- If shrubs and non-woody riparian vegetation are disturbed, they shall be replaced with similar native species appropriate to the site.
- Disturbance to native shrubs, woody perennials or tree removal on the streambank or in the stream channel shall be avoided or minimized.
- If riparian trees over six inches dbh (diameter at breast height) are to be removed, they shall be replaced by native species appropriate to the site at a 3:1 ratio.
- Where physical constraints in the project area prevent replanting at a 3:1 ratio and canopy cover is sufficient for habitat needs, replanting may occur at a lesser replacement ratio.

- Vegetation planting for slope protection purposes shall be timed to require as little irrigation as possible for ensuring establishment by the commencement of the rainy season.
- The spread or introduction of exotic plant species shall be avoided to the maximum extent possible by avoiding areas with established native vegetation during cleanup/restoration activities, restoring disturbed areas with appropriate native species, and post-project monitoring and control of exotic species.
- Removal of invasive exotic species after construction activities is strongly recommended. Mechanical removal (hand tools, weed whacking, hand pulling) of exotics shall be done in preparation for establishment of native plantings.
- Where permanent soil stabilization is required a locally-appropriate mix of native grass species shall be used such as a mix containing *Nassella pulchra*, *Hordeum brachyantherum*, *Elymus glaucus*, and *Bromus carinatus* or as described in the site's Biological Resources Assessment.
- Entire cultivation site shall be seeded and maintained as a permanent non-tilled cover crop during non-usage times. Straw mulch shall be used where native seeding is not practicable.
- Use mulches (e.g. wood chips or bark) in cultivation areas that do not have ground cover to prevent erosion and minimize evaporative loss.
- Mulch shall be applied at a rate of 4000 lbs / acre and seeding shall be applied to achieve 70% cover in the first year or approximately 200 lbs / acre.
- Annual inspections for the purpose of assessing the survival and growth of revegetated areas and the presence of exposed soil shall be conducted for three years following project work.
- Dischargers and/or their consultant(s) or third party representative(s) shall note the presence of native/non-native vegetation and extent of exposed soil, and take photographs during each inspection.
- Dischargers and/or their consultant(s) or third party representative(s) shall provide the location of each work site, pre- and post-project work photos, diagram of all areas revegetated and the planting methods and plants used, and an assessment of the success of the revegetation program in the annual monitoring report as required under relevant state and local water board regulations.

G.6 IRRIGATION & CULTIVATION MANAGEMENT

- Cultivation-related waste shall be stored in a place where it will not enter a stream.
- Soil bags and other garbage shall be collected, contained, and disposed of at an appropriate facility, including for recycling where available.
- Pots shall be collected and stored where they will not enter a waterway or create a nuisance.
- Plant waste and other compostable materials be stored (or composted, as applicable) at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.
- Imported soil for cultivation purposes shall be minimized. In the event that containers (e.g. grow bags or grow pots) are used for cultivation, reuse of soil shall be maximized to the extent feasible.

- Spent growth medium (i.e. soil and other organic medium) shall be handled to minimize discharge of soil and residual nutrients and chemicals to watercourses. Proper handling of spent soil could include incorporating into garden beds, spreading on a stable surface and revegetation, storage in watertight dumpsters, covering with tarps or plastic sheeting prior to proper disposal.
- Trash containers of sufficient size and number shall be provided and properly serviced to contain the solid waste generated by the project.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Use lined bins or dumpsters to reduce leaking of liquid waste. Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash. Consider using refuse containers that are bear-proof and/or secure from wildlife.
- Refuse shall be removed from the site on a frequency that does not result in nuisance conditions, transported in a manner that they remain contained during transport, and the contents shall be disposed of properly at a proper disposal facility.
- Ensure that human waste disposal systems do not pose a threat to surface or ground water quality or create a nuisance. Onsite treatment systems should follow applicable County ordinances for human waste disposal requirements, consistent with the applicable tier under the State Water Resources Control Board Onsite Waste Treatment System Policy.
- Install buffer strips, bioswales, or vegetation downslope of cultivation areas to filter runoff of chemicals from irrigation.
- Irrigate at rates to avoid or minimize runoff.
- Regularly inspect and repair leaks in mains and laterals, in irrigation connections, or at the ends of drip tape and feeder lines.
- Design irrigation system to include redundancy (i.e., safety valves) in the event that leaks occur, so that waste of water is prevented and minimized.
- Recapture and reuse irrigation runoff (tailwater) where possible, through passive (gravity-fed) or active (pumped) means.
- Construct retention basins for tailwater infiltration; percolation medium may be used to reduce pollutant concentration in infiltrated water. Constructed treatment wetlands may also be effective at reducing nutrient loads in water.
- Ensure that drainage and/or infiltration areas are located away from unstable or potentially unstable features.
- Regularly replace worn, outdated or inefficient irrigation system components and equipment.
- Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over-fertilization.
- All chemicals shall be stored in a manner, method, and location that ensures that there is no threat of discharge to waters of the State.

- Products shall be labeled properly and applied according to the label.
- Use integrated pest management strategies that apply pesticides only to the area of need, only when there is an economic benefit to the grower, and at times when runoff losses are least likely.
- Periodically calibrate pesticide application equipment.
- Use anti-backflow devices on water supply hoses, and other mixing/loading practices designed to reduce the risk of runoff and spills.
- Petroleum products shall be stored with a secondary containment system such as a pan or a tub
- Throughout the rainy season, any temporary containment facility shall have a permanent cover and side-wind protection, or be covered during non-working days and prior to and during rain events.
- Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.
- Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials shall be covered during non-working days and prior to rain events.
- Have proper chemical and fertilizer storage instructions posted at all times in an open and conspicuous location.
- Prepare and keep a spill prevention and cleanup plan onsite when dealing with any hazardous materials.
- Keep ample supply of appropriate spill clean-up material near storage areas.
- Plant cover crops to boost soil fertility, improve soil texture, and protect from storm caused sediment runoff.

G.7 SPECIAL-STATUS SPECIES AVOIDANCE MEASURES

- All employees and contractors including one-time contractors and day-laborers should be distributed cards with visual identifications of all of the aforementioned special-status species, including both male and female, and juvenile and adult forms, and be briefed on all of the following AMMs contained herein. Species cards may be obtained from PEC on request.

- Observation of any of the aforementioned SSS onsite shall result in immediate stoppage of all work and notification of PEC and/or CDFW.

- All animals observed onsite shall be allowed to leave the premises voluntarily without being harassed.

- Vehicle speeds should be limited to 5 mph all year, with 3 mph limit during amphibian breeding and migration season from October 1-June 1, and for breeding bird season from February 1-September 1.

- No loud noises including unmuffled or non-street legal vehicles, heavy machinery, hammering, discharge of firearms, or unmuffled generators are allowed during the breeding and nesting

window to avoid impacts to NSO from February 1-September 1.

- Avoid ground disturbance including trenching, grading, or road scraping to a depth of greater than 10" without first clearing the site from a qualified biologist to avoid disturbing estivating amphibians.

- Access within 100 feet of nesting migratory bird should not be allowed, and a sign should be placed stating there is a sensitive habitat ahead and no entry is permitted.

- All roadways and culverts should be inspected once before major rain events and once after to ensure that all erosion control materials are effective and not discharging sediment to any jurisdictional watercourses.

- All containers and other vessels left outside unattended should be checked before use to ensure that no animals are inside.

- Vessels including buckets should be turned over on their sides to allow animals to escape.

- No holes greater than 6" deep should be left exposed and uncovered to avoid making "pitfall traps" into which animals can enter but cannot escape. If holes such as post holes must be left for more than 24 hours they should be checked daily to ensure no animals are inside.

- Clear areas within 100 feet of any watercourse by a biological monitor prior to disturbing the ground more than 6".

- Only native woody species should be planted wherever revegetation is required such as along the sides of roadcuts and bridge abutments.

- Preconstruction breeding bird surveys for NSO and other migratory birds should be performed if tree removal is to take place.

- No tree or vegetation removal should be conducted during breeding bird season from February 1 to September 1.

- No aerial wires or lines should be permitted that may impede the flight path of nesting birds.

- No upward pointed lights should be permitted during anytime during the year, and ambient outdoor night time lights should be prohibited during the breeding bird period from February 1 to September 1.

- Use of rodenticides should not be used under any circumstances due to the hazard of secondary ingestion by raptors.