ZENTNER
Planning & Ecology

NOVA MASTER PLAN

Special Status Habitat and Species Analysis

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Zentner Planning and Ecology

Oakland

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Nova Master Plan

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I. INTRODUCTION

A. Purpose

This report is intended to assess the environmental conditions within the Nova Master Plan property (also known as the "property" or "project site"). This report will (1) determine the presence or likelihood of occurrence of any special status plant or wildlife species listed by State, Federal, or local governments; (2) identify sensitive habitats that occur on the property, including U.S. Army Corps of Engineers jurisdictional wetlands and waters; (3) discuss biological and associated regulatory issues relevant to the proposed project; and (4) recommend appropriate measures to be incorporated into the proposed project to avoid any potential impacts to special status species and to mitigate for impacts to special status habitats.

B. Methodology

Zentner Planning and Ecology completed site surveys to review the property and surrounding area for special status species and habitats. These site surveys took place on October 5 and 7, 2021 and February 7 and 22, 2022. In addition to the surveys, this analysis draws on earlier work completed for the site and surrounding areas and included a review of the following reports: Special Status Habitat and Species Analysis for Fredrick Warehouse (Zentner and Zentner 2016), Biological Resources Assessment for the Fredrick Property (LSA 2015; analysis included a review of this and other properties in the area), and SR 29/221 Soscol Junction Improvement project, Draft Environmental Impact Report/ Environmental Assessment (CalTrans 2015).

Along with site surveys, Zentner Planning and Ecology reviewed online databases to determine special-status plant and animal species potentially occurring in the project vicinity. The databases include the most recent versions of the California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game; CDFG) California Natural Diversity Database (CNDDB), United States Fish and Wildlife Service (USFWS) special status species list, and the California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Plants. Each database was searched for the project site and greater project area (i.e., the surrounding five-mile radius).

C. Project Location

The project site is located in southern Napa County, west of Highway 29 and northeast of the Napa County Airport (**Figure 1**). The property totals approximately 109.5 acres and is comprised of a north and south section that connect in their western corners, but are otherwise separated by an existing developed parcel. The north and south sections are hereafter referred to as Nova north and Nova south, or collectively as the project site.

Devlin Road and Highway 29 run southeast to northwest, east of the project site and sanitary district spray fields lie to the west of the property. Undeveloped land lies to the south of the property and Suscol Creek, solar arrays, and a site currently under construction lie to the north.

D. Project Description

The proposed project will subdivide the property and construct roadways and associated infrastructure on the site. The site will be divided into 15 parcels, including a parcel that contains the existing Nova office site, a parcel that contains an approved warehouse site, a parcel that contains existing wetland and upland mitigation features, and 12 new, undeveloped parcels. Infrastructure will be constructed within the parcels for commercial/light industrial use. Additionally, an internal roadway system will be constructed from Devlin Road to provide access to both the Nova south and Nova north project sections.

II. ENVIRONMENTAL SETTING

A. Site Description

The site is undeveloped and dominated by annual grasslands with a scattering of coyote bush and other relatively small stature trees and shrubs. Larger trees are generally absent from the site, though the site contain a number of moderately size willows, a handful of small live oaks, and several large planted blue gum trees on the western edge of the property and several in the north adjacent to Susol Creek.

The project site is located northeast of the Napa County Sanitation District (NCSD) Soscol Water Recycling Facility, which also includes NCSD spray fields that lie just south of the parcel. Suscol Creek, solar arrays and a site where a warehouse is currently being developed lie to the north of the property. Undeveloped land lies to the south and Devlin Road and Highway 29 are just east of the property. The surrounding land use is mostly agricultural, primarily for vineyards, and lightly industrial.

As discussed above, the project site is comprised of northern and southern nodes that connect in their western corners, but are otherwise separated by an existing developed parcel. The northern section (Nova north) contains a small section of Suscol Creek and the adjoining riparian habitat. The remaining parts of Nova north are generally flat, non-native grasslands though there is also a small seasonal wetland and a dirt road/pedestrian path running through a portion of the Nova north.

The southern portion of the site (Nova south) is dominated by annual grasslands with a number of seasonal wetlands scattered throughout and three small ephemeral channels generally running east to west. A large soil stockpile is located in the southwestern part of Nova south. The stockpile area rises several feet above the remaining parts of the property and contains more ruderal vegetation than the other parts of the property. A wetland constructed to provide mitigation for a previous project is located in the southeastern part of the southern section and is bounded by a raised berm. This constructed wetland receives flows from an offsite tributary as well as from the adjacent landscape.

B. Plant Communities and Associated Wildlife Habitat

There are six plant communities on the project site: annual grassland, ruderal, seasonal wetlands, ephemeral tributaries, riparian woodland, and Suscol Creek. Annual grasslands comprise the majority of the property with the other habitat types comprising only a small fraction of the remaining property. A full list of plant species observed on-site is provided in **Appendix A**.

Nomenclature used for plant names follows *The Jepson Manual*, Second Edition (Baldwin et. al. 2012) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). Nomenclature for wildlife follows the CDFW's *Complete list of Amphibian, Reptile, Bird, and Mammal Species in California*

(2008) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

1. Annual Grassland

Annual grassland is the dominant habitat on the project site. The annual grasslands are dominated by non-native annual species with occasional coyote bush scattered throughout. The coyote bush are relatively large and generally solitary. These annual grasslands are characteristic of the region and are common throughout the region's open spaces generally in sites that have a history of grazing and land use disturbances.

Brome fescue (*Festuca bromoides*), ripgut (*Bromus diandrus*), wild oats (*Avena fatua*), medusa head (*Elymus caput-medusae*), and soft chess (*Bromus hordeaceus*) are generally dominant, though other forbs including bindweed (*Concolculus arvensis*), red-stem filaree (*Erodium cicutarium*) and wild geranium (*Geranium dissectum*) are also common. Native species including salt grass (*Distichlis spicata*) and purple needle grass (*Stipa pulchra*) also occur at low densities within the grasslands.

Several large blue gums are growing along the eastern border of the project site. The blue gum (*Eucalyptus globulus*), which are tall mature trees, were likely planted as wind breaks. A sub-community of the annual grassland is mixed non-native annual grassland - coyote bush scrub. This sub-community is found predominantly on the Nova south portion of the project site.

2. Ruderal

The ruderal vegetation plant communities are scattered throughout the Property. The ruderal vegetation communities are dominated by Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*), radish (*Raphinus sativus*), teasel (*Dipsacus sp.),* Harding grass (*Phalaris aquatica*), and Himalayan blackberry (*Rubis armeniacus*). Other vegetation in the ruderal areas include stinkwort (*Dittrichia graveolens*), red-stem filaree, cut-leaved geranium and other non-native annual grasses and forbs. Most of these plants rank from moderate to high on the California Invasive Plant Council Inventory of invasive plants, except for radish, red stem filaree and cut leaved geranium, which rank limited (CAL IPC 2019).

3. Seasonal Wetland

There are numerous seasonal wetlands scattered throughout the project site, some of which are associated with the ephemeral channels, while the remainder are isolated. There are a total of 24 small seasonal wetlands, which total 0.607 acres (**Figures 2 and 3**). These wetlands are mostly dominated by annual grasses such as Mediterranean barley (*Hordeum marinum*; FAC) and Italian ryegrass (*Festuca perennis*; FAC). Most of these seasonal wetlands are very shallow depressions caused by differential settling on site fills. These wetlands have very small watersheds and are primarily filled by direct rainfall and remain inundated a short time after heavy rainfall, though saturation may continue for longer periods during the rainy season.

The dominant vegetation within the wetlands, Italian ryegrass, Mediterranean barley, and hyssop loosestrife (*Lythrum hyssopifolia*), with occasional salt grass (*Distichlis spicata*), and rush (*Juncus xiphioides* and *balticus*).

4. Ephemeral Tributary

There are two ephemeral tributaries and one ephemeral drainage ditch on the project site. The main ephemeral tributary on site (A1) runs 635.8 feet-long through Nova south and has a number of seasonal wetlands that are associated with it, as noted above. This channel drains from a culvert on Nova south's northeastern border and continues through the site to its southwestern border and totals 0.040 acres. Drainage ditch B1 (0.017 acres; 443.8 lf) and Tributary C1 (0.008 acres; 69.7 lf) meet each other adjacent to Nova south's western border and drain into the existing mitigation channel terrace (Figures 2 and 3).

5. Riparian Woodland

The property contains only a very small area of riparian woodland habitat adjacent to Suscol Creek in the property's northeastern corner. The creek has a moderately dense band of riparian vegetation. The riparian woodland is dominated by valley oaks (*Quercus lobata*) with sandbar willow (*Salix lasiolepis*), yellow willow (*Salix lasiandra*), and white alder (*Alnus rhombifolia*) near the creek and buckey (*Aesculus californica*), coast live oak (*Quercus agrifolia*) and invading black locust (*Robinia pseudoacacia*) away from the creek. The non-native locust was planted as a windbreak downstream of the site but has been methodically spreading along the riparian zone and now composes a good portion of the existing tree cover within the riparian zone. Ruderal vegetation is dominant in the understory vegetation and contains the same suite of species described in the ruderal plant community discussion above.

6. Suscol Creek

Lastly, a small portion of Suscol Creek, an intermittent tributary, touches the far northeastern corner of the Nova north border of the project site and totals 0.008 acres. Suscol Creek is a relatively natural, but incised intermittent creek. Suscol Creek flows from the hills to the east and west before passing the corner of the project site and flowing another approximately 2,750 feet west into the Napa River. West of the project site, the creek has been channelized. The channel bed is predominantly unvegetated with cobble with earthen banks.

C. Wildlife

Wildlife at the site appears limited primarily to common suburban/rural species. Mammals could include coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), *striped skunk* (*Mephitis mephitis*), and lagomorphs (rabbits) such as black-tailed jackrabbit (*Lepus californicus*). Small mammals on the site likely include California vole (*Microtus californicus*) and deer mouse (*Peromyscus maniculatus*). Predatory birds such as red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), American kestrels (*Falco*

sparverius), white-tailed kites (*Elanus leucurus*), and Swainson's hawks (*Buteo swainsoni*) are known from the region. Other birds commonly found in this type of grassland habitat include mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), red-winged black bird (*Agelaius phoeniceus*), and barn swallow (*Hirundo rustica*). Common reptiles likely present include western fence lizard (*Sceloperus occidentalis*), southern alligator lizard (*Gerrhonotus multicarinatus*), gopher snake (*Pituophis melanoleucus*), and western rattle snake (*Crotalus viridis*). A full list of species observed on site is attached in **Appendix B**.

The dominant ruderal vegetation is tall and dense which makes it difficult for small mammal predators, such as coyotes and the previously listed predatory birds, to hunt the small mammals within the grassland. Therefore, foraging most likely takes place in adjacent areas where vegetation is primarily shorter grassland with fewer ruderal species because hunting would be easier. However, mammals may pass through or otherwise utilize the site.

III. SPECIAL-STATUS SPECIES

A. Special- Status Species

1. Definitions

For the purposes of this assessment, "special-status" refers to those species that meet one or more of the following criteria: Plant and animal species listed by the USFWS or CDFW as Threatened or Endangered; species proposed for listing as Threatened or Endangered; or species that are candidates for listing as Threatened or Endangered. (Fish and Game Code §2050 et seq.; 14 CCR §670.1 et seq.) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for wildlife; various notices in the Federal Register [FR] for proposed species). For candidate species; FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068).

Plant and animal species considered as "Endangered, Rare, or Threatened" are defined by Section 15380 of the CEQA Guidelines. Section 15380(b) states that a species of animal or plant is "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A species is "rare" when either "(A) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become Endangered if its environment worsens; or (B) the species is likely to become Endangered within the foreseeable future throughout all or a portion of its range and may be considered 'Threatened' as that term is used in the Federal Endangered Species Act" (ESA). Plants included on Ranks 1, 2, 3, or 4 of the California Native Plant Society (CNPS) or on lists maintained by local chapters of CNPS are also designated as special status species.

Animal species designated as "Fully Protected", "Species of Special Concern," or "Special Animals" by the CDFW have no legal status under the California Endangered Species Act (CESA), but CDFW recommends their protection as their populations are generally declining and they could be listed as Threatened or Endangered (under CESA) in the future or they are species considered by CDFW to the those of the "greatest conservation need" (CDFG 2009; Fish and Game Codes 3511, 4700, 5050, and 5515). "Special Animals" is a relatively recent and broad list developed by CDFW to encompass a number of other Federal, State, Local and Non-Governmental Organization (NGO) lists of special status species. It includes, for example, species listed by the US Bureau of Land Management (BLM), species listed by the Western Bat Working Group (WBWG) or the International Union for the Conservation of Nature (IUCN).

Birds designated by the USFWS as "Birds of Conservation Concern" also have no legal status under the ESA, but USFWS recommends their protection as their populations are generally declining, and they could be listed as Threatened or Endangered (under ESA) in the future. More information on special status species, including definitions and abbreviations, is provided in Appendix D.

The Migratory Bird Treaty Act (16 U.S.C. 703-711) makes it unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture, kill, attempt to transport (import or export) any

migratory bird including any part, nest, or egg of any such bird. Essentially, the law includes all species of birds, not just those typically considered migratory. Rock doves, also known as "pigeons" (Columba livia) and European starlings (Sturnus vulgaris) are the only birds that are exceptions to this law.

2. Special Status Species Potentially Occurring on the Property

Figures 4 and 5 (Special Status Animal and Plant Species Occurrences within Five Miles of the Project Site) provide graphical illustrations of the known records for special-status animal and plant species within five miles of the project. According to the CNPS Inventory, USFWS database, and CDFG's California Natural Diversity Database (CNDDB), a total of 28 special status animal and 29 special status plant species are known to occur in the general region of the project; more specifically, within the USGS 7.5 minute Quadrangles surrounding the project site. However, a smaller number of species including 27 wildlife species and 23 plants are known to occur within 5 miles of the site, which are shown on **Figure 4**. The CNDDB and USFWS species lists are provided in **Appendix C**. The definitions for the special status species designations are provided in **Appendix D**.

Wildlife

The 28 special status wildlife species that occur in the project region are described in **Table 1**, along with their regulatory status, habitat requirements, and an evaluation of their potential to occur on the property. The wildlife species that have potential to occur on the property are described in more detail below. Most of the species are highly unlikely to occur the property because the species are out of the range, lack suitable habitat onsite, or there is an absence or recent local occurrences.

Out of the special status wildlife species with potential to occur in the project region, only Swainson's hawks (*Buteo swainsoni*) and white tailed kites (*Elanus Leucurus*) have been observed in proximity to the site during previous site surveys (Zentner and Zentner 2016). The remaining following species, discussed below, have not been seen during recent or previous surveys. However, they have potential to nest on-site at some time, move through the site, or otherwise depend on the site for some function given the presence of potentially suitable habitat and known occurrences in the surrounding area.

Amphibians

California red-legged frog (*Rana aurora draytonii;* CRLF); (FT, CDFW:SSC, IUCN:VU)

The California Red-legged frog (CRLF) historically ranged from Redding and Marin County, south to northern Baja California (Jennings and Hayes 1994). Due to the loss and modification of habitat, predation by the non-native bullfrog, and impacted water quality, its range has been reduced to isolated drainages within coastal ranges and near-coastal foothills. The United

Table 1
Potential Special Status Wildlife

Scientific name	Common name	Status	Habitat	Potential habitat on-site	Range	Known range/ Critical habitat	Potential for occurrence on-site
AMPHIBIANS							
Rana draytonii	California red-legged frog	FT, CSC, IUCN:VU, SA	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland	No breeding habitat	Mendocino County to Baja California, primarily west of the Cascade-Sierra crest.	Yes	Unlikley: No breeding habitat
BIRDS							
Agelaius tricolor	tricolored blackbird	BLM:S, CSC, IUCN:EN, NABCI:RWL, USFWS:BCC, SA	Freshwater marsh, Marsh & swamp, Swamp, Wetland	No	Oregon to southern California; primarily along the central California coast and the Central Valley.	Yes	None: No habitat
Aquila chrysaetos	golden eagle	BLM:S, CDF:S, CFP, CDFW:WL, IUCN:LC, USFWS:BCC, SA	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland	No breeding habitat	Permanent resident in mountainous areas throughout California.	Yes	None: No breeding habitat; foraging potential only
Athene cunicularia	burrowing owl	BLM:S, CSC, IUCN:LC, USFWS:BCC, SA	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland	Marginal	Permanent resident of southern California valleys, from the Bay Area to Los Vegas, Nevada. Breeding range extends through the northern	Yes	Unlikely: Marginal habitat
Buteo regalis	ferruginous hawk	CDFW:WL, IUCN:LC, USFWS:BCC, SA	Great Basin grassland, Great Basin scrub, Pinon & juniper woodlands, Valley & foothill grassland	No	Nonbreeding resident throughout most of California except the northernmost counties.	Not in breeding range	None: No breeding habitat
Buteo swainsoni	Swainson's hawk	ST, BLM:S, IUCN:LC, USFWS:BCC, SA	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland	Yes	Breeding range extends throughout California's interior counties inluding Contra Costa and Alameda.	Yes	Likely: occurrences within proximity to

Table 1
Potential Special Status Wildlife

Charadrius alexandrinus nivosus	western snowy plover	FT, CSC, NABCI:RWL, USFWS:BCC, SA	Great Basin standing waters, Sand shore, Wetland	No	Along the Pacific coast of the U.S., but more numerous in valleys and deserts in southern California.	Yes	None: No habitat
Circus cyaneus	northern harrier	CSC, IUCN:LC, SA	Coastal scrub, Great Basin grassland, Marsh & swamp, Riparian scrub, Valley & foothill grassland, Wetland	Marginal	From Alaska to eastern Canada and south to Southern California	Yes	Unlikely: Marginal habitat, would have been
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	CSC, USFWS:BCC, SA	Marsh & swamp	No	Breeds in the San Francisco Bay area from the Tomales Bay to Carquinez Strait and San Jose. Non-breeding range extends	No	None: No habitat
Laterallus jamaicensis coturniculus	California black rail	ST, BLM:S, IUCN: NT, CFP, NABCI:RWL, USFWS:BCC, SA	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland	No	Fragmented populations in San Francisco Bay area, including San Pablo Bay, Tomales Bay and Bolinas Lagoon.	No	None: No habitat
Melospiza melodia samuelis	San Pablo song sparrow	CSC, USFWS:BCC, SA	geranium	No	Salt marshes along the north side and San Francisco and San Pablo bays and on the south side of San Pablo Bay southwest to San Pablo Point on Richmond	No	None: No habitat
Rallus longirostris obsoletus	California clapper rail	FE, SE, CFP, NABCI:RWL, SA	Brackish marsh, Marsh & swamp, Salt marsh, Wetland	No	The San Francisco Bay area, including all 9 counties that border the bay.	Yes	None: No habitat
Sternula antillarum browni	California least tern	FE, SE, CFP, NABCI:RWL, SA	Alkali playa, Wetland	No	Breeds along the California coast from the San Francisco Bay to Baja California. Winters	Yes	None: No habitat
Strix occidentalis caurina	Northern Spotted owl	FT, SC, CDF:S, CSC, IUCN:NT, NABCI:YWL, SA	Ponderosa Pine/Douglas-fir forestes in the eastern Cascade Ranges of Washington and in Douglas fir/evergreen hardwood forests in northwestern California.	No	Southwestern British Columbia south through western Washington and Oregon to Marin County on the north-	No	None: No habitat
FISH							
Eucyclogobius newberryi	tidewater goby	FE, AMS:E, CSC, IUCN:VU, SA	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters	No	Coastal streams from Oregon to San Diego, although it is possibly extirpated from the	Yes	None: No habitat

Table 1
Potential Special Status Wildlife

Hypomesus transpacificus	Delta smelt	FT, SE, AMS:T, IUCN:EN, SA	Open waters of bays, tidal rivers, channels, and sloughs.Rarely occurs in salt water with a sality greater than 10-12ppt.	No	The upper Sand Francisco Estuary, particularily the upper Sacramento-San Joaquin Delta	No	None: No habitat
Oncorhynchus mykiss irideus	Steelhead-central California	FT, AMS:T, SA	Streams and rivers, deep low velocity pools, freshwater bodies, estuaries, Pacific ocean	No	Bir Sur Coast, Carmel Basin, Interior Coast Range, and San Luis Obispos Terrace.	Yes	None: No habitat
Spirinchus thaleichthys	longfin smelt	FC, ST, CSC, SA	Aquatic, Estuary	No	California coastal streams from the San Francisco Bay northward. However populations in the San	No	None: No habitat
INVERTEBRAT							
Bombus occidentalis	western bumble bee	USFS:S, X:IM, SA	Once relatively widespread	Marginal	Once realtively widespread, now in serious decline in central to southern California	Marginal	Unlikely: Historic records only
Branchinecta conservatio	Conservancy fairy shrimp	FE, IUCN:EN, SA	Inhabit astatic pools located in swales formed by old, braided alluvium and filled by winter and spring rians, last until June.	No	Endemic to the grassland of the norther two-thirds of the Central Vally. Not known from	No	None: No habitat, Out of Range
Branchinecta lynchi	vernal pool fairy shrimp	FT, IUCN:VU, SA	Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools (astatic rain-filled pools).	No	Central Valley, Central Coast mountains, and south coast mountains	No	None: No habitat
Calasellus californicus	An isopod	SA	Found in freshwater habitats; the known collections are from a freshwater well and two springs	No	Known from Lake, Napa, Marin, Santa Curz, and Santa Clara	Yes	None: No habitat
Callophrys mossii bayensis	San Bruno elfin butterfly	FE, X:CI, SA	Valley & foothill grassland;Only occurs on north-facing slopes within fogbelt with hostplant, stonecrop (Sedum spathulifolium).	No	Primarily open ridges in San Mateo County and Contra Costa County.	No	None: No habitat
Speyeria callippe callippe	Callippe silverspot butterfly	FE, X:CI, SA	Restricted to northern coastal scurb of the SF Peninsula. Requires hostplant Viola pedunculata.	No	SF Peninsula	No	None: No habitat
Syncaris pacifica	California freshwater shrimp	FE, SE, IUCN:EN, SA	Found in low elevation, low gradient streams where riparian cover is moderate to heavy; Requires shallow pools away from main streamflow withi undercut banks and exposed roots in the winter and leafy branches touching the water in the summer.	No	Endemic to Marin, Napa, Sonoma Counties	Yes	None: No habitat
MAMMALS							
Antrozous pallidus	pallid bat	BLM:S, CSC, IUCN:LC, USFS:S, WBWG:H, SA	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland	Marginal	Permanent resident throughout California and western U.S. from Washington to Colorado to Mexico	Yes	Unlikely: Habitat marginal, no evidence of roosts

Table 1
Potential Special Status Wildlife

Reithrodontomys raviventris	salt-marsh harvest mouse	FE, SE, CFP, IUCN:EN, SA	Marsh & swamp, Wetland	No	Primarily in salt marshes in south San Francisco Bay including San Mateo, Santa Clara, Contra Costa Alameda, Marin, Napa, Solano and	Yes	None: No habitat
Taxidea taxus	American badger	CSC, IUCN:LC, SA	Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Coastal prairie, Coastal scrub, Meadow & seep, Riparian forest, Riparian scrub, Riparian woodland, Ultramafic, Valley & foothill grassland.	Yes	Throughout California and North American; from British Columbia to the Great Lake Region and south to Central Mexico.	Yes	Unlikely: Not observed during surveys; no signs of potential burrows
REPTILES							
Emys marmorata	western pond turtle	BLM:S, CSC, IUCN:VU, USFS:S, SA	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing	No	Isolated populations exist in the western half of California from the Sierra Nevada foothills to the Pacific coast, throughout the length of the state.	Yes	None: No habitat

States Fish and Wildlife Service (USFWS) notes that the CRLF once occupied 46 counties, but is now found in only 22 with the greatest concentrations in Monterey, San Luis Obispo and Santa Barbara Counties (USFWS 2002).

The CRLF is a relatively large, spade-shaped species at 1.7 to 5.1 inches in length. They vary in color, and may be brown, grey, olive, or reddish in color with black spots and irregular blotches. The lower abdomen and undersides of the legs are often, but not always, red. They have a dark mask above the upper jaw. The species is characterized by its prominent dorsolateral fold which extends on the body from eye to hip. The tadpoles are brown and marked with small, dark spots. The lower body is creamy white and also flecked with small spots.

From late-November to late-April, adult CRLF are typically found in or near breeding habitat, which consists of perennial or near-perennial, deep (greater than 2 foot) ponds, pools or similar habitats associated with dense riparian or marsh vegetation (Hayes and Jennings 1989, 1994, Jennings 1988). Breeding takes place in streams, deep pools, backwaters within streams and creeks, ponds, marshes, and stock ponds. CRLF can occur in ephemeral ponds or permanent streams and ponds; however, populations probably cannot persist in ephemeral streams (Jennings and Hayes 1985). Habitats with the highest densities of CRLF are deep-water ponds with dense stands of overhanging willows and a fringe of cattails (Jennings 1988; Rathbun et al. 1993).

During rainy nights, however, they may also be found 200 to 300 feet away from the aquatic habitat (Zeiner et al 1988). From late-spring through fall, CRLF will stay near aquatic habitat, but during the end of this period they may move away from the breeding locale into nearby moist locations.

CRLF breeds during the winter and early spring, from as early as late November through April and May. Larvae (tadpoles) remain in breeding ponds until metamorphosis in the summer months. Mortality rates are high, with less than 1 percent of eggs laid reaching metamorphosis (Jennings et al. 1992). Males reach sexual maturity about 2 years after metamorphosis, while females require 3 years to attain sexual maturity (Jennings and Hayes 1985). Individuals of this species may live up to 10 years (Jennings et al. 1992). Young CRLF (eggs, larvae, and tadpoles) are found almost exclusively in ponds (such as stockponds) or slow moving water in creeks, ditches, or similar habitat. Typically, these ponds or creeks are well-vegetated (Zeiner et al 1988) but habitat may also consist of well-grazed stockponds with little marsh vegetation (USFWS 2002). Young CRLF generally do not occur in aquatic habitats which also contain bullfrogs (Jennings and Hayes 1989).

Determining the location of CRLF habitat is complicated by CRLF movement away from relatively easily identified riparian and wetland habitats. Much of the movement ecology of CRLF is still poorly understood (Jennings and Hayes 1994), but they appear to move significant distances at two times during a year. First, adults move between winter oviposition sites and spring and summer foraging habitat (Jennings and Hayes 1989). Frogs observed in upland habitat at night during winter rains may represent such movement, but new aquatic habitat may also be found and colonized during such periods of reduced water stress. Movement into upland riparian habitat at such time may also protect frogs from catastrophic injury and transport by floodwaters (Jennings and Hayes 1994). Second, CRLF move into the shelter of

riparian thickets during fall, when stream habitat is often much reduced (Rathbun et al. 1993). Such behavior appears to resemble estivation of amphibians like California tiger salamanders and spadefoots (Jameson 1981), however, the CRLF, especially the coastal populations, does not experience seasonal dormancy.

According to CNDDB, there have been three observations of CRLF within five miles of the project site. All three occurrences are located south of the project site between approximately 3 to 5 miles from the site in areas with either perennial water and/or emergent vegetation. One occurrence is located in an ephemeral drainage within 317-acres of preserved CRLF habitat owned by the Napa Valley Unified School District. The second occurrence was noted within a large quarry pond in 2006 and the third within North Slough Creek. Critical Habitat for this species has been identified; the closest is Unit SOL-2, whose closest border is approximately 2.25 miles east of the project site.

There is no habitat on the property that provides potential breeding habitat for the CRLF. Neither the ephemeral tributary nor the seasonal wetlands on the site hold sufficient water to support CRLF breeding. As well, Suscol Creek, a small part of which passes through the property, is relatively shallow and bare, with a few short-lived ponds. Suscol Creek, therefore, does not contain suitable CRLF breeding habitat.

Though there is no breeding habitat on the property, there is a small potential for the species to pass through or otherwise utilize the property. Therefore, a preconstruction survey should be conducted to ensure that no CRLF are in the vicinity when work commences.

Birds *(nesting birds unless noted otherwise)*

Golden Eagle (*Aquila chrysaetos*); (BLM:S, CDF:S, CDFW:FP, CDFW:WL, IUCN:LC, USFWS:BCC)

The golden eagle is a large, mostly dark-colored raptor with a golden nape that can have wingspans up to 79 inches wide (Sibley 2000). It is a resident and migrant throughout California, excluding for the Central Valley. It is found in elevation ranges from sea level up to about 11,500 feet (Zeiner 1990). Their habitat typically includes foothills, mountain areas, sage-juniper flats and desert. They utilize secluded cliffs with overhanging ledges and large trees for cover.

The golden eagle breeds from late January to August, with its peak between March and July. Nests are constructed on cliffs and in large trees in open areas. Their large nests (10 feet wide) are made of sticks, twigs and greenery.

There is one CNDDB record of a golden eagle within five miles of the project site. The occurrence is located west of the project site between Cuttings Wharf Road and horseshoe bend on the Napa River, nearly 2 miles northwest of the site. At this CNDDB observation, birds were observed in a nest from 2003 to 2005, no birds were observed in the nest in 2006, the nest was no longer present in the tree in 2008, and the tree was removed in 2008. The CNDDB presence is listed as "possibly extirpated."

Since 2005 here have been no recorded observations of golden eagles within five miles of the project site since 2005 and the previous observation is listed as possibly extirpated. Additionally, no golden eagles have been seen during recent site surveys and there are no trees on the property that could support golden eagle nesting. However, there are a number of large trees in the vicinity that could support nesting. Though it is unlikely that a golden eagle occurs in the vicinity of the project site a pre-construction survey should be completed to ensure the species is not impacted by the proposed project.

Burrowing Owl (*Athene cunicularia*) (BLM:S, CDFW:SSC, IUCN:LC, USFWS:BCC)

The burrowing owl (*Athene cunicularia*) is a small ground-dwelling owl that lives in open, dry grasslands, agricultural and range lands, and desert habitats associated with burrowing mammals (Zeiner et. al. 1990). The owl typically nests in old ground squirrel (*Spermophilus beecheyi*) or similar burrows for breeding, wintering, foraging, and migration stopovers. They have been known to occupy artificially constructed burrows. Burrowing owls are commonly seen perching on fences or on mounds outside their burrows. The owl is a mostly opportunistic feeder and forages on level areas with short grass or bare ground. Grasshoppers, beetles, mice, ground squirrels, rats, and gophers comprise the majority of their diet, however, they may also feed on reptiles, young cottontails, amphibians, scorpions, bats, and birds. The owl tends to inhabit areas where food sources are stable and available year-round. They are migratory (leaving the breeding grounds in fall) but often return to the same nest sites in spring to lay eggs from late March to May.

Burrowing owls were once common throughout California but are now found mainly in the Central and Imperial Valleys (DeSante et al. 1997). Over 60% of the breeding pairs known to exist in the 1980's disappeared by the early 1990's. The population decline is due to predation by non-native species, small mammal controls in farmlands, and habitat loss. This species also has very low fledgling success rates (Trulio 1997).

According to CNDDB, there have been three observations of burrowing owls within five miles of the project site. All three occurrences are located south of the project site. The closest occurrence is located less than one mile away on the flat, ruderal shoulder of Devlin Road. The CNDDB record lists this occurrence as a "wintering site…no burrow or whitewash observed; owl may have flushed from concrete utility box partly covered with plywood." The other two occurrences are from Hudeman Slough near Appleby Bay, which are approximately 5 miles southwest of the site near the Napa River marshes.

A single burrowing owl has been recorded in proximity to the project site, though this observation was a wintering site and not a breeding site. There are no known occurrences of burrowing owls on the project site and there have not been any observed on the project site during recent site surveys. As well, the project site is not ideal burrowing owl habitat because the grassland vegetation is relatively tall and dense and the site's soil are generally hardened and compact making it difficult for animals burrows. Additionally, no ground squirrels or ground squirrel burrows were observed on site during recent surveys; ground squirrel burrows are commonly used by burrowing owls. Finally, the site's history of farming and tilling reduces the likelihood of this species, and no burrows of any kind were noted on the project. For these

reasons, burrowing owls are unlikely to be found on the site. However, because the species is known from the region, a pre-construction survey should be completed in accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation, prior to commencing the proposed project to ensure the species is not impacted by the proposed project.

Swainson's hawk (*Buteo swainsoni*) (ST, BLM:S, IUCN:LC, USFWS:BCC) Nesting and Foraging Habitat

The Swainson's hawk is a large, long-winged species that ranges from 18 to 22 inches in height. It is an even, brown color on its upper parts and white below with a light brown breast. Its tail is banded and brown. Its wings are longer and more pointed than most hawks and soars with wings in a shallow V-shape (Woodbridge 1998).

The hawk nests in western North America from March to July and migrates to southern South America for the winter starting in August. This hawk is similar in size compared to the red tailed hawk (*Buteo jamaicencis*) and utilizes open habitats. Potential habitats include mixed and short grass grasslands with scattered trees, dry grasslands and meadows, agricultural fields, riparian areas, oak savannas, and juniper-sage flats (Woodbridge 1998).

The hawk forages for insects, small mammals including California voles (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), and valley pocket gopher (*Thomomys bottae*), and birds by flying 100 to 300 feet above the ground. The hawk is highly adapted to human disturbance, unlike most other raptors, and they actively seek fields where activities including discing, mowing, flooding, and harvesting which force small mammals from their burrows. The raptor may forage up to 18 miles from a nest but usually tries to minimize flight distance to prey. Fledglings normally forage within 0.5 miles of the nest. Fledgling mortality is an important factor in the decline in population levels. Mortality may reach 80% among fledglings and is often at least 60% (Woodbridge 1998).

The Central Valley and the Great Basin support the majority of the California's Swainson's hawk populations. Historically, the species was found throughout the state, in bioregions such as the Southern Transverse Ranges, Central Coast Ranges, Central Valley, Great Basin, and Mojave-Colorado Desert. Typically, the raptors nest in large native riparian trees in close proximity to agricultural land, which supports accessible prey. Swainson's hawk typically occurs in valley oak (*Quercus lobota*), Fremont cottonwood (*Populus fremontii*), black walnut (*Juglans hindsii*), and willows (*Salix ssp*.). Although the hawk will fly some distance from the nest tree to forage, most will seek foraging habitat near the nest. Consequently, the Central Valley population is clustered in areas where suitable nesting and foraging habitat occur together. The Swainson's hawk population has declined by 90% since the 1940's due primarily to loss of nesting habitat (Woodbridge 1998).

According to CNDDB, there have been seven observations of Swainson's hawks within five miles of the project site. Three of the occurrences are located north of the project site and four are located south of the project site. The closest occurrence is located within one quarter mile of the project site along Suscol Creek. The CNDDB record for this occurrence states, "nesting suspected in 2003 but no nest found. 1 pair nested, a 2nd pair may have nested nearby in 2005;

nest-building, copulation, & courtship display observed, 1-14 May 2005. Nest fledged 3 young in 2012 and 2 in 2013." The second closest CNDDB occurrence was within a mile of the project site and describes two adults and a nest from 2008 in a eucalyptus grove south of the project site near open wastewater spray fields. Another CNDDB occurrence describes the presence of a nesting pair in early 2012 approximately within a mile northeast of the project site in Suscol creek. Three of the remaining CNDDB records are located within two and a half miles of the project site along the railroad tracks north of the Napa County Airport (2008), approximately 0.3 miles north of Sheehy Creek (2007 & 2012), and approximately 0.2 miles south of highway junction 12 and 29 (2013). The furthest observation is approximately four miles away in Carneros Creek, about 0.25 miles southeast of highway 12 (2013).

The project site contains only a few trees that provide suitable potential nesting habitat for the Swainson's hawk. The annual grassland portions of the site also contain potentially suitable foraging habitat. However, the adjacent properties directly east and south of the southeast corner contain potential trees that could provide potential nesting habitat.

The SR 29/221 Soscol Junction Improvement Project EA/EIR (Caltrans 2015), which is located approximately 0.50 miles north of the project site, concluded that 23.66 acres of Swainson's hawk foraging habitat accounted for just 0.16% of their potential foraging habitat. Further it found that the loss of this small amount of vegetation relative to the Swainson's hawk territory size would not have a substantial adverse effect, either directly or indirectly, on the Swainson's hawk or its habitat, nor would it substantially reduce the number or restrict the range of that species. The proposed project would affect a relatively small potential foraging area (109.5 acres), which is still well below 1% of the potential foraging area for a Swainson's hawk. The site also provides a very small amount of potential nesting and roosting habitat for the Swainson's hawk. Therefore, there is no evidence that this species may be significantly impacted by the proposed project.

However, to ensure that no nesting birds are disrupted by the project, a preconstruction nesting season survey should be conducted to determine the presence/absence of this species in proximity to the proposed work on the site.

Northern harrier (*Circus cyaneus*) (CSC, IUCN:LC)

The northern harrier (*Circus cyaneus*), formerly known as the marsh hawk, is a medium-sized raptor with long, narrow wings and tail. The species has a rectangular, white rump and owl-like facial disk. Adult males are pale gray above, with mostly white below and black wing tips. Females are generally larger and are brown above with brown-streaked breast. The species utilizes a wide variety of open habitats, with North American populations breeding from Alaska to eastern Canada, and south to southern California, Arizona, Kansas, and Virginia, and wintering from South America to southern Canada (Cripe 2000).

Breeding habitat includes fresh and brackish wetlands, open wet meadows and grasslands, shrub-steppe, desert sinks, areas along rivers and lakes, and crop fields (Grinnel and Miller 1944, MacWhirter and Bildstein 1996, Martin 1987). The species commonly nests on the ground in shrubby vegetation at marsh edges but may also nest several miles from water (CNDDB).

CNDDB has one observation of a northern harrier within five miles of the project site. The CNDDB record describes a nesting pair observed nesting on Coon Island, 6 miles south of Napa, from March 1, 2004 to June 15, 2004. This occurrence is approximately 4 miles southwest of the project.

Although the project site contains moderately suitable foraging habitat and potential nesting habitat, no northern harriers have been observed on or in the vicinity of the project site. Additionally, no northern harriers have been observed on the project site during recent site visits. However, a pre-construction survey should be completed to determine the presence/absence of the species within the project vicinity and to ensure no impacts to the species result from the project.

White- tailed kite (*Elanus leucurus*); (BLM:S, CDFW:FP, IUCN:LC)

The white-tailed kite is a medium sized raptor found in open savannas and grasslands. The species has long, narrow grey wings with a black spot on the inner portions. The face and lower body is white. They have red eyes. White-tailed kites are most notable for their distinctive foraging habit in which they hover about 80 feet above the ground, flapping their wings or hovering, until they drop straight down onto their prey.

This species is found year-round in the western and southern United States and through Mexico, Central and South America. They forage for rodents and other prey in cultivated fields, open woodland, marshes, and grasslands and nests in trees near marshes. White-tailed kites nest in the upper third of trees within open space or in forested areas. They may utilize existent, old nests of other species.

There is one CNDDB record of a white-tailed kite within five miles of the project site. The occurrence, recorded in 2018, was located roughly 2 miles north of the project site. The record notes two nests, both near ruderal grassland. One nest was observed in an oak tree in 2017 with a nesting pair and four fledglings. The other nest was observed in a pine tree in 2018 with a nesting pair and two fledglings.

The project site does not contain suitable nesting or breeding habitat for the white-tailed kite. Though several of the adjacent and nearby properties contain trees that could support nesting white-tailed kites. Though there are not any recorded observations of the bird within the immediate vicinity of the project site, the species was observed flying over the site during the February 7, 2022 site survey. A pre-construction survey should be completed to ensure the species is absent from the vicinity of the project and will not be impacted by the project.

Other Nesting raptors (various species), generally protected under the CDFW Code and the Migratory Bird Treaty Act (MBTA).

The site contains moderately suitable foraging habitat for raptor species though it lacks suitable nesting habitat. However, there is potential nesting habitat on the adjacent properties and, therefore, project related work could cause indirect impacts to nesting raptors if they are located in proximity to the site. Therefore, a preconstruction survey should be completed to

determine the presence/absence of nesting raptors on and in the vicinity of the project, prior to the start of construction.

Other Migratory Nesting Birds; protected by the MBTA

The project site provides suitable habitat for nesting birds protected by the MBTA, primarily within the smaller trees and shrubs on site. Accordingly, there is some limited potential for migratory nesting birds to nest on or adjacent to the site. Consequently, a preconstruction nesting bird survey should be completed.

Mammals

Pallid Bat (*Antrozous pallidus*) (BLM:S, CDFW:SSC, IUCN:LC, USFS:S, WBWG:H)

The pallid bat is a large, long-eared vespertilionid bat. There are six subspecies of the pallid bat. Three are found in California, including *A. p. pacificus*, *A. p. pallidus*, and *A. p. minor*. This species is easily distinguished from other bat species with its large size, eyes, and ears, light tan coloration, pig-like snout, and distinctive skunk odor. Its color varies dependent on location, blond in desert locations and tan along the coast and farther north. Pallid bat scat commonly contains the remains of insects like scorpions, Jerusalem crickets, sphinx moths, and/or long-horned beetles.

In California, the species occurs throughout the state in a variety of habitats including low desert, oak woodland and coastal redwood forests, extending up to 3,000 m elevation in the Sierra Nevada. Of the three present subspecies, *A. p. pacificus*, the largest subspecies, occurs along the coast and in the Coast Ranges west of the Central Valley. *A. p. minor*, the smallest subspecies, occurs in the Colorado River basin and adjacent mountain ranges. *A. p. pallidus* occurs throughout the rest of the state (including western San Diego County, the Central Valley, all of the Sierra Nevada and areas east of the crest, and, farther north, all areas east of the coast ranges) (Martin and Schmidly 1982).

The pallid bat is colonial with colonies forming in March to May and remaining until October (Barbour and Davis 1969). They are primarily a crevice roosting species and seek out rock crevices, old buildings, bridges, caves, mines and hollow trees (Barbour and Davis 1969). Breeding occurs in the spring and one to two young are born in the early summer. They remain dependent on their mothers for a minimum of 6 weeks.

CNDDB lists seven records of the pallid bat within 5 miles of the project site. Five of the records are located west of the project site and two of the records are located north of the project site. The records describe the presence of maternity and bachelor roosts, breeding habitats, and foraging areas within the project vicinity. Several of the records describe multi-species assemblages of bats.

The pallid bat is not likely to occur on the project site, as CNDDB has no records of the species on the site nor have any been observed during recent site visits. However, the property contains a small amount of potential roosting habitat in the trees along Suscol Creek, though no observations or indications of this species have been made on-site. Therefore, a pre-

construction survey should be conducted to ensure that the pallid bat is not impacted by the proposed project.

American Badger *(Taxidea taxus*), (CDFW:SSC, IUCN:LC)

The American badger is a carnivorous mammal found throughout the state of California, except in the North Coast area (Grinnell et al. 1937). They have stocky, low-slung bodies with short powerful legs and long foreclaws (up to 5 cm in length). They are 23.6 to 29.5 inches in length and weigh approximately 15 to 20 pounds. Male individuals are slightly larger than females. Their bodies are covered in silvery coat of coarse fur and heads with distinctive white and black markings.

Badgers occur throughout California except in humid coastal forests and areas of dense forest and they do not survive on cultivated land (CDFG 1986). Typically, they are most abundant in drier open stages of most shrub, forest and herbaceous habitats with friable soils.

American badgers predate on small mammal populations, particularly ground squirrels and pocket gophers (Zeiner et al 1990). They dig burrows in friable soils and frequently reuse old burrows. Badger populations have declined in the past century, although still little is known about their current population size and extent. They mate in the summer and early fall and give birth to a litter of 2 to 3 in March and April (Long 1973). They are nocturnal and diurnal and active yearlong with potential for periods of torpor (Long 1973).

CNDDB lists two records of the American badger within 5 miles of the project site. The nearest record is approximately 2.7 miles northwest of the project site and the second observation is approximately 3 miles north of the project site. The first record describes a female collected in 1911. The second record is based on information taken from Grinnell, J., J. S. Dixon and J.M. Linsdale. 1937. Fur-Bearing Mammals of California. Their Natural History, Systematic Status, and Relations to Man. Univ. Calif. Press, Berkeley 1:1-375, 2L376-777.

Badgers are not likely to occur on the project site. There have been no observations of badgers within the vicinity of the property since 1911, nor have any badger or burrows been observed on the property during site surveys. Additionally, the property was formerly cultivated and contains disturbed soils and ruderal vegetation that are not favored by the species. Therefore, this species is unlikely to occur on the site and the proposed project is unlikely impact this species.

Reptiles

Western Pond Turtle (*Actinemys marmorata*) (BLM:S CDFW:SSC IUCN:VU USFS:S)

The western pond turtle is a small to medium species growing from 3.5 to 8.5 inches in length. Hatchlings are 1 inch in shell length. They are dark brown, olive brown, or blackish in color with a low, unkeeled carapace. A pattern of darker lines or spots radiate from the centers of the scutes. The head and legs of the turtle are dark with creamy white or yellow speckling. Males have a light throat with no markings and a low domed carapace, while females have a throat with dark markings and a high-domed carapace.

Once inhabiting an extensive portion of the west, it is now listed as vulnerable do to a decline in its range. It is found along the west coast from the Coast Ranges to the central valley in California, and north into Washington and British Columbia. Isolated populations may also occur in Susanville, Ca, the Mojave Desert, and in Nevada in the Truckee, Carson, and East Walker Rivers. They have been found at elevations from sea level to over 5,900 ft.

The species is aquatic and is found in ponds, lakes, rivers, marshes, and irrigation ditches with abundant vegetation within woodlands, grasslands, or forests. They require logs, rocks, or exposed vegetation one which they bask in the sun. In summer droughts or during colder winter months, the turtles bury themselves in soft soil or hibernate in the muddy bottoms of pools. They may also move along creek channels until they find an isolated pool.

Mating occurs in April and May when the turtles reach 8 to 10 years in age. Eggs are laid between April and August along stream or pond margins.

There are six CNDDB records of the western pond turtle within five miles of the project site. Three of the records are north of the project site, two of which were observed in 1996. The records in 1996 include an observation of two adults in a duck pond between the Napa River and highway 12, and an observation of four adults in a dredge canal in South Napa east of the Napa River. The third observation north of the project site was described in Lake Camille, in small artificial lakes, where two adults were observed in 2011 and one adult was observed in 2016. The last three observations include over 15 adults west of elkhorn point in 2001, two juvenile male turtles in a northern slough channel in 2002, and at Tulucay creek where two adults were seen in 2003 and two adults were observed in 2016.

The project site contains moderately suitable habitat for the western pond turtle. The species could use the ephemeral tributary, which runs through the project site. Therefore, a preconstruction survey should be conducted for to ensure that no western pond turtles are in the vicinity when work commences.

Invertebrates

Western Bumblebee (*Bombus occidentalis*) (USFS:S)

The western bumblebee has many color variations. In general, bumblebees from northern California north to British Columbia and east to southwest Saskatchewan and Montana have the following coloring: yellow hairs on the front part of the thorax, then black hair on the first through half of the fourth abdominal segments and white hairs are on the edge of the fourth, fifth, and sixth segments. Black hair covers the bumblebee's head (Thorp et al. 2008).

The western bumblebee was widespread and common throughout the western United States and western Canada before 1998 inhabiting northern California, Oregon, Washington, Alaska, Idaho, Montana, western Nebraska, western North Dakota, western South Dakota, Wyoming, Utah, Colorado, northern Arizona, and New Mexico (Xerces Society 2009). Since 1998 bumblebee populations have declined drastically though it is difficult to assess the magnitude of the declines since most of the historic range has not been systematically sampled. Viable populations exist in Alaska and east of the Cascades in the Canadian and U.S. Rocky Mountains.

Populations in central California, Oregon, Washington, and southern British Columbia have mostly disappeared.

Bumblebee colonies are annual. In late winter or early spring, the queen emerges from hibernation and selects a nest site, typically a pre-existing hole such as an abandoned rodent hole (Goulsen 2003a). Bumblebees do not depend on a specific type of flower, but visit a range of different plant species. They are important generalist pollinators of a wide variety of crops and flowering plants (Foulsen 2003).

CNDD has one record of the western bumble bee within five miles of the project site. The records describe collections taken in 1913, 1949, and 1953 and the exact location of this record is unknown though CNDDB mapped the occurrence in the general vicinity of the City of Napa.

The western bumblebee is not likely to be impacted by the project as the species has not been observed on or nesting on the project site. In addition, the CNDDB records for this species are historic and no indications are that this species has been observed since. The continual disturbance of the site including farming and tilling of the soils would have made the site inhospitable to this species. Therefore, this species is unlikely to occur on-site.

Vernal pool fairy shrimp (*Branchinecta lynchi*) (FT, IUCN:VU, SA)

The vernal pool fairy shrimp is a freshwater crustacean species that is endemic to California and Oregon and found solely in vernal pools. The range of the species is limited to three areas in southern Oregon and 32 in California throughout the central valley and Coast Ranges, with a few outlying populations.

The vernal pool fairy shrimp is small and ranges in length from 0.43 to 0.98 inches. They are usually translucent but may be shaded white or orange. They have compound eyes, no carapace, and eleven pairs of legs, which they move in a wave-like motion to propel themselves. The species has a lifetime expectancy of roughly two months (January to March) that is tied directly to the water levels and temperature of the vernal pool. They can survive temperatures between 43 and 68 degrees F. In typical winter conditions, the mature in 41 days. The shrimp lay drought-resistant eggs before they die, which embed in the soil of the pools and hatch with inundation during the next winter.

CNDDB has one record of vernal pool fairy shrimp within 5 miles of the project site. The record is approximately 2.25 miles south of the project site along the south end of the Napa airport. The record states that over 100 adults were observed in 2000 and that 1,000s of adults were observed in 2002 and 2003 within a shallow topographic depression (pool).

The project site contains a number of very shallow, seasonal wetlands that dry fairly quickly, often between winter storms, and do not hold water for a prolonged period of time. Because the wetlands do not hold water for longer than 41 days, but rather a fraction of that, the vernal pool fairy shrimp are unlikely to survive and reproduce within the site's wetlands. Additionally, there are no records of the species in the immediate vicinity of the project site. For these reasons, the species is unlikely to occur on site or be impacted by the proposed project.

Plants

A total 29 special status plant species occur in the nine USGS quadrangles that surround the project site. These species are described in **Table 2** along with their regulatory status, habitat requirements, and an evaluation of their potential to occur on the site. The majority of the species are highly unlikely to occur onsite because they are out of the range of the species, lack suitable habitat onsite or lack of local occurrences and were not observed during vegetation surveys on the site during their blooming period.

Of the remaining special status species occurring in the project region, none have been observed within the project site boundaries. While the following species have not been observed, they have at least some likelihood to occur on-site given the presence of potentially suitable habitat and known occurrences in the region.

Henderson's bent grass (*Agrostis hendersonii)* - CRPR 3.2

Henderson's bent grass is an annual herb in the Poaceae family that is native to California. It is known from Butte, Calaveras, Merced, Napa, Shasta, Tehama, and Tuolumne counties. It is found in vernal pools and valley and foothill grasslands (CNPS 2021).

Henderson's bent grass grows to a maximum of 6 to 70 centimeters in height. The plant has small narrow leaves. This species blooms from April to June with small brown flowers which have dense cylindrical inflorescence and hairlike tips (CNPS Calscape).

There are no CNDDB records for this species within five miles of the project site.

The project site's annual grasslands and seasonal wetlands provide moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Franciscan onion (*Allium peninsulare var. franciscanum)* - CRPR 1B.2

Franciscan onion (*Allium peninsulare var. franciscanum)* is a perennial bulbiferous herb in the Alliaceae family and is endemic to California. It is known from Mendocino, Napa, San Mateo, Santa Clara, and Sonoma. It is found in cismontane woodland, and in valley and foothill grasslands. It grows on clay soils, often on serpentinite soils, and volcanic soil (CNPS 2021).

Franciscan onion blooms with clusters of pink umbel flowers from April to June (CNPS Calscape 2021).

There is one CNDDB record for this species within five miles of the project site. The exact location of the observation is unknown and is based off a field collection in 2000. The collection occurred at Di Rosa Preserve in foothill woodland habitat along a rocky knoll approximately four miles northwest of the project site.

Table 2:
Potential Special Status Plant Species

Scientific name	Common name	Status	Habitat	Potential habitat on-site	Range	Known Range	Elevation	Life Form	Potential for Occurrence On-site	Flowering / Survey Period
Amsinckia lunaris	bent-flowered fiddleneck	CRPR 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland	Marginal	Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, Sonoma, Yolo	Yes	3-500 meters	annual herb	None: not observed during surveys, marginal habitat	March - June
Astragalus tener var. tener	alkali milk-vetch	CRPR 1B.2	Playas, valley & foothill grassland, vernal pool, wetland	Marginal	Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, Santa Clara, San Francisco, San Joaquin, Solano, Sonoma, Stanslaus, Yolo	Yes	1 - 60 meters	annual herb	None: not observed during surveys, marginal habitat	March - June
Balsamorhiza macrolepis	big-scale balsamroot	CRPR 1B.2; BLM:S	Chaparral, cismontane woodland, ultramafic, valley and foothill grassland; sometimes on serpentine	Marginal	Alameda, Amador, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, Tuolumne	Yes	90 -1555 meters	perennial herb	None: not observed during surveys, marginal habitat	March - June
Calamagrostis ophitidis	Serpentine reed grass	CRPR 4.3	Chaparral (often north facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grasslands	No	Lake, Mendocino, Marin, Napa, Sonoma	Yes	90 - 1065 meters	perennial herb	None: no habitat	April - July
Carex lyngbyei	Lyngbye's sedge	CRPR 2B.2	Marshes and swamps (brackish or freshwater)	No	Del Norte, Humbolt, Mendocino, Marin, Napa	Yes	0 - 10 meters	perennial rhizomatous herb	None: no habitat	April - August
Castilleja affinis var. neglecta	Tiburon paintbrush	ST, FE, CRPR 1B.2	Valley and foothill grassland (serpentinite); rocky serpentine sites	No	Marin, Napa, Santa Clara	Yes	60 - 400 meters	Perennial herb	None: no habitat	April - June
Castilleja ambigua var. ambigua	Johnny-nip	CRPR 4.2	Coastal bluff scrub, coastal prarie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins	Marginal	Alameda, Contra Costa, Del Norte, Humbolt, Mendocino, Marin, Napa, Santa Cruz, San Francisco, San Luis Obispo, San Mateo, Sonoma	Yes	0 - 435 meters	annual herb	None: not observed during surveys, no observations in County	March - August

Table 2:
Potential Special Status Plant Species

Ceanothus purpureus	Holly-leaved ceanothus	CRPR 1B.2	Chaparral, cismontane woodland, volcanic and rocky	No	Napa, Shasta, Solano, Sonoma, Trinity	Yes	120 - 640 meters	perennial evergreen shrub	None: no habitat	February - June
Centromadia parryi spp. parryi	Pappose tarplant	CRPR 1B.2; BLM:S	Chaparral, coastal prarie, meadows and seeps, marshes and swamps (coastal salt), and valley and foothill grassland (vernally mesic) often alkaline	Marginal	Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma	Yes	0 - 420 meters	annual herb	Unlikely- Need a late season survey	May - November
Chloropyron molle spp. molle	soft salty bird's beak	CRPR 1B.2, FE, SR	Marshes and swamps	No	Contra Costa, Marin, Napa, Sacramento, Solano, Sonoma	Yes	0 - 3 meters	annual herb	None: no habitat	July - November
Downingia pusilla	dwarf downingia	CRPR 2B.2	Valley and foothill grassland (mesic sites), vernal pools	No	Amador, Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, Yuba	Yes	1 - 445 meters	annual herb	None: no habitat	March - May
Eleocharis parvula	small spikerush	CRPR 4.3	Marshes and swamps	No	Butte, Contra Costa, Glenn, Humbolt, Mono, Napa, Orange, Plumas, Siskiyou, San Luis Obispo, Sonoma, Ventura	Yes	1 - 3020 meters	perennial herb	None: no habitat	April - Septermber
Erigeron greenei	Greene's narrow-leaved daisy	CRPR 1B.2	Chaparral serpentinite or volcanic	No	Colusa, Lake, Napa, Sonoma	Yes	80 - 1005 meters	perennial herb	None: no habitat	May - September
Erigeron biolettii	streamside daisy	CRPR 3	Broadleaded upland forest, cismontane woodland, North Coast coniferous forest	No	Humbolt, Mendoconio, Marin, Napa, Solano, Sonoma	Yes	30 - 1100 meters	perennial herb	None: no habitat	June - October
Extriplex (Atroplex) joaquinana	San Joaquin spearscale	CRPR 1B.2, BLM:S	Chenopod scrub, alkali meadows and seeps, playas, valley and foothill grassland	Marginal	Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, Santa Clara, San Joaquin, San Luis Obispo, Solano, Tulare, Yolo	Yes	1 - 835 meters	annual herb	None: not observed during surveys, marginal habitat	April - October

Table 2:
Potential Special Status Plant Species

Iris longipetala	Coast iris	CRPR 4.2	Coastal prarie, lower montane coniferous forest, meadows and seeps	No	Alameda, Contra Costa, Humbolt, Mendocino, Monterey, Main, Napa, San Benito, Santa Clara, San Francisco, San Mateo, Solano, Sonoma	Yes	0 - 600 meters	perennial rhizomatous herb	None: no habitat	March - May
Juglans hindsii	Northern California black walnut	CRPR 1B.1	Riparian forest, riparian woodland	Yes	Contra Costa, Lake, Napa, Sacramento, Solano, Yolo	Yes	0 - 440 meters	perennial deciduous tree	Unlikely: not observed during surveys	April - May
Lasthenia conjugens	Contra Costa goldfields	FE, CRPR 1B.1	Alkali playa, cismontane woodland, valley and foothill grassland, vernal pool, wetland	No	Alameda, Contra Costa, Mendocino, Monterey, Marin , Napa, Santa Barbara, Santa Clara, Solano, Sonoma	Yes	0 - 470 meters	annual herb	None: no habitat, not observed	March - June
Lathyrus jepsonii var. jepsonii	Delta tule pea	CRPR 1B.2	Marshes and swamps (freshwater and brackish)	No	Contra Costa, Napa, Sacramento, San Joaquin, Solano, Sonoma, Yolo	Yes	0 - 5 meters	perennial herb	None: no habitat	May - September
Legenere limosa	Legenere	CRPR 1B.1, BLM:S	Vernal pools	No	Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Stanislaus, Tehama, Yuba	Yes	1 - 880 meters	annual herb	None: no habitat	April - June
Lessingia hololeuca	lessingia	CRPR 3.1	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland	Marginal	Alameda, Monterey, Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma, Yolo	Yes	15 - 305 meters	annual herb	Unlikely: not observed during surveys	June - October
Lilaeopsis masonii	Mason's lilaeopsis	SR, CRPR 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub	No	Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, Yolo	Yes	0 - 10 meters	perennial rhizomatous herb	None: no habitat	April - November
Micropus amphibolus	Mt. Diablo cottonweed	CRPR 23.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland; bare, grassy or rocky slopes	Marginal	Alameda, Contra Costa, Colusa, Lake, Monterey, Marin, Napa, Santa Barbara, Santa Clara, Santa Cruz, San Joaquin, Solano, Sonoma	Yes	45 - 825 meters	annual herb	None: not observed during surveys, marginal habitat	March - May
Polygonum marinense	Marin knotweed	CRPR 3.1	Brackish marsh, marsh & swamp, salt marsh, wetland	No	Alameda, Humboldt, Marin, Napa, Solano, Sonoma	Yes	0 - 10 meters	annual herb	None: no habitat	April - October

Table 2:
Potential Special Status Plant Species

Ranunculus lobbii	Lobb's aquatic buttercup	CRPR 4.2	Cismontane woodland, North Cost coniferous forest, valley and foothill grassland, vernal pools	No	Alameda, Contra Costa, Mendocino, Marin, Napa, Santa Cruz, San Mateo, Solano, Sonoma	Yes	15-470 meters	annual herb	None: no habitat	February - May
Symphyotrichum lentum	Suisun Marsh aster	CRPR 1B.2	Marshes and swamps brackish and freshwater	No	Contra Costa, Napa, Sacramento, San Joaquin, Solano, Yolo	Yes	0 - 3 meters	perennial rhizomatous herb	None: no habitat	April - November
Trifolium amoenum	Two-fork clover	FE, CRPR 1B.1	Coastal bluff scrub, valley and foothill grassland	Marginal	Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma	Yes	5 - 415 meters	annual herb	None: not observed during surveys, marginal habitat	April - June
Trifolium hydrophilum	saline clover	CRPR 1B.2	Marsh & swamp, valley & foothill grassland, vernal pool, wetland	No	Alameda, Contra Costa, Colusa, Lake, Monterey, Napa, Sacramento, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Yolo	Yes	0 - 300 meters	annual herb	None: no habitat	April - June
Viburnum ellipticum	oval-leaved viburnum	CRPR 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest	No	Alameda, Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Lake, Mendocino, Mariposa, Napa, Placer, Shasta, Solano, Sonoma, Tehama	Yes	215 - 1400 meters	perennial deciduous shrub	None: no habitat	May - June

The project site's annual grasslands provide marginal habitat for this species. No signs of this bulb species were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Alkali milk-vetch (*Astragalus tener var. tener)* - CRPR 1B.2

Alkali milk-vetch is an annual herb that is native and endemic to California. It inhabits playas, clay soils supporting valley and foothill grasslands, and alkaline, vernal pools (CNDDB 2001). The vernal pool types in which it grows are Northern Basalt Flow, Northern Claypan, Northern Hardpan, and Northern Volcanic Ashflow (Sawyer and Keeler-Wolf 1995). It occurs in open, alkaline and vernally moist meadows from sea level to 200 feet in elevation. The alkali milk-vetch is believed extant in Alameda, Merced, Napa, Solano, and Yolo counties. It is believed extirpated from Contra Costa, Monterey, San Benito, Sonoma, and Stanislaus counties (Keeler-Wolf *et al.* 1998).

Alkali milk-vetch is a delicate, sparsely hairy to smooth herb, growing one to twelve inches high. It has 7 to 17 leaflets on blades 2.54 to 8.89 cm long of varying shape and size. They may be narrow and pointed to wedge-shaped with blunt and notched tips. It flowers from March to June during which it produces two to twelve pink-purple flowers per inflorescence. The fruits are elongated legumes that are from 1 to 2.5 cm in length and straight or slightly curved. This species can be distinguished from all other species of *Astragalus* that occur in the same areas by its deflexed fruit stalks and smooth seeds (Liston 1992).

Threats to the species include habitat destruction, especially agricultural conversions (Skinner and Pavlik 1994). However, anecdotal evidence suggests that *A. tener* var. *tener* may benefit from some types of temporary surface disturbance (C. Witham *in litt.* 1998). Competitors that threaten *A. tener* var. *tener* include *Lepidium latifolium* and *Salsola* spp. (Russian thistle) in Yolo County, and *Melilotus indica* (sweet clover) and *Lolium multiflorum* in Alameda County (CNDDB 2001). Extirpation from random processes is also a threat to virtually all of the populations due to their small numbers of plants, which make them vulnerable to chance events. Loss of pollinators due to destruction or degradation of their habitat also is a threat to *A. tener* var. *tener* because it would not be able to set seed if pollinators were absent. Alkali milk-vetch was last collected in the Bay Area in 1959. It is protected at the Jepson Prairie Preserve. Alkali milk-vetch is known from San Francisco from historical records. It was purportedly identified in 1868 by Kellogg and Harford, occurring in low, sub-saline fields in the Mission Dolores area.

There is one CNDDB record of this species within five miles of the project site. The observation is from a field survey in 1982 where approximately 50 plants were observed in an open grassland with vernal pools. However, the observation site was destroyed in 1983 due to construction and the population is now extirpated.

The project site's annual grasslands and seasonal wetlands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species.

Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Johnny-nip (*Castilleja ambigua var. ambigua*) - CRPR 4.2

Johnny-nip (*Castilleja ambigua var. ambigua)* is an annual herb in the family Orobanchaceae and is native to California. It is known from Alameda, Contra Costa, Del Norte, Humboldt, Marin, Mendocino, Napa, San Mateo, Santa Cruz, Solano, and Sonoma. It is found in coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and vernal pools (CNPS 2021).

Johnny-nip blooms from March to August with yellow flowers surrounded by rounded bracts that become pink with age (CNPS 2021, Jepson eFlora 2021).

There are no CNDDB records for this species within five miles of the project site.

The project site's annual grasslands and seasonal wetlands provide moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Dwarf downingia (*Downingia pusilla)* - CNPS 2B.2

Dwarf downingia is an annual herb that is native to California and found elsewhere in North America and down to South America. It is known in the northern central valley and north San Francisco Bay, from Merced and Mariposa counties in the south to Tehama County in the north (CNPS 2003).

Dwarf downingia grows in vernal pools, playa pools, and on margins of vernal lakes other mesic areas within valley and foothill grassland, both in alkaline (saline) and nonalkaline soils. It occurs with other rare wetland and vernal pool species such as alkali milk-vetch (*Astragalus tener* var. *tener*), legenere (*Legenere limosa*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), Heckard's peppergrass (*Lepidium latipes* var. *heckardii*) and little mouse-tail (*Myosurus minimus* ssp. *apus*). The species is threatened by urbanization, development, agriculture, grazing, vehicles, and industrial forestry.

Dwarf downingia are 3 to 8 cm tall with small linear leaves. Its tubular, radially symmetric flowers are less than 1 cm across, in contrast to all other *Downingia* species, which have larger, showy, asymmetric flowers. The flowers, borne at the ends of branches, are white or blue with two small yellow spots near the throat (Hickman 1993). It flowers March through May (Hickman 1993, CNDDB 2003, CNPS 2003).

There are two CNDDB records of this species within five miles of the project site. One of the observations was from a 1960 collection in a grassland roughly 1 mile north of the project site,

however, the population was extirpated but 1983. The remaining observation is from 2001 between highway 12 and Suscol and Sheehy Creeks, within 0.5 miles of the project site.

The project site's annual grasslands and seasonal wetlands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

St. Helena fawn lily (*Erythronium helenae)* - CRPR 4.2

St. Helena fawn lily is a perennial bulbiferous herb in the Liliaceae family that is native and endemic to California. It is known from Lake, Napa, and Sonoma counties. It is found in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands (CNPS 2021).

St. Helena fawn lily grows to be approximately 11.8 inches tall. This species blossoms from a bulb, which is three to five centimeters wide, from March to May. The plant produces two relatively large leaves and a flower with white petals, a yellow base, pink or purple streaks as they age, and prominent yellow anthers and stamens (CNPS Calscape).

There are no CNDDB records for this species within five miles of the project site.

The project site's annual grasslands provide moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Brewer's western flax (*Hesperolinon breweri)* - CRPR 1B.2

Brewer's western flax is an annual herb that is native and endemic to California. Its range is limited to Contra Costa, Napa, and Solano Counties. It is found in chaparral, valley grassland, and foothill woodland habitats, often in association with serpentine soil. It occurs on elevations between 65 and 800 meters.

The plant is small and erect, with linear green to purple leaves. The flowers emerge within dense inflorescences and have five bright yellow petals with large, protruding orange-yellow stamens. It blooms from May to July (Hickman 1993).

There are no CNDDB records for this species within five miles of the project site.

The project site's annual grasslands provide moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should

be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Contra Costa goldfields *(Lasthenia conjugens)* - FE, CRPR 1B.1

Contra Costa goldfields is an annual herb in the Asteraceae family that is native and endemic to California. It is known from only 20 extant occurrences. Eleven of these occurrences are from areas east and south of the City of Fairfield in Solano County. The species has also been recorded in Alameda, Napa, and Solano Counties and has been extirpated from Santa Barbara, Santa Clara, and Mendocino Counties. Historical observations included many occurrences in the transition zone between vernal pools and tidal marshes on the eastern side of the San Francisco Bay. The species is found in vernal pools (northern basalt flow, northern claypan, and northern volcanic ashflow), swales, and moist depressions and flats in cismontane woodland and valley and foothill grassland between 0 and 470 meters elevation in clay or loam soils.

Contra Costa goldfields grows to less than 40 centimeters and has opposite, green leaves and an infrequently branched stem. The leaves of the plant are entire or pinnately lobed and approximately 8 centimeters in length. The inflorescences are solitary flower heads composed of eight to 12 phylaries fused at one third to mid length, 6 to 13 golden yellow ray flowers, and numerous yellow disk flowers. The blooming period is from March through June and it has specialized adaptations to allow it to exist in vernal pools. The species is an annual, which allows it to complete its life cycle within the time period of vernal pool inundation and drying and also produces dormant seeds that allow them to survive through the dry summers until they can germinate when the winter rains come (Hickman 1993).

Development, agriculture land conversion, overgrazing, non-native invasive plants, and creek channelizing threaten nearly all remaining populations of this species (CNPS 2008). Critical habitat for this species was declared in August 2003.

There are two CNDDB records of this species within five miles of the project site. The first record was observed in 1994 northwest of the project site with several hundreds of plants; however, the area has since been developed into agricultural land and the population is now believed to be possibly extirpated. The second record of this species is approximately one mile north of the project site in volcanic vernal pools that have been periodically surveyed since 1983, and over 10,000 plants were observed in 2017.

The project site's annual grasslands and seasonal wetlands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Bristly leptosiphon (*Leptosiphon acicularis*) - CRPR 4.2

Bristly leptosiphon is an annual herb in the Polemoniaceae family that is native and endemic to California. It is known from Alameda, Butte, Colusa, Humboldt, Kern, Lake, Marin, Mendocino,

Napa, Placer, San Benito, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, and Yuba counties. It is found in chaparral, cismontane woodland, coastal prairie, and valley and foothill grasslands (CNPS 2021).

Bristly leptosiphon have a hairy stem and grow to be 1.2 to 5.9 inches tall. The species blooms from April to July with small yellow flowers which are surrounded by needle-like sepals (CNPS Calscape).

There are no CNDDB records for this species within five miles of the project site.

The project site's annual grasslands provide moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Jepson's leptosiphon (*Leptosiphon jepsonii)* - CRPR 1B.2

Jepson's leptosiphon is a small (4 to 12 cm) herb found in chaparral, woodland, and valley and foothill grassland habitats, usually on volcanic soils (CNPS 2020). It has white to pink flowers with exserted stamens, with a blooming period between April and May (Hickman 1993). The plant is endemic to the north coast ranges of California.

There is one CNDDB record of this species within five miles of the project site. The record occurred in Westwood Hills Park, over four miles northeast of the project site. The species was observed in 2004, and in 2011 was described as "nearly extinct several years ago".

The project site's annual grasslands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Marin knotweed (*Polygonum marinense)* - CRPR 3.1

Marin knotweed is an annual herb that is native and endemic to California. Marin knotweed is known from fewer than 20 locations in Marin, Napa, Solano, and Sonoma counties. It occurs in coastal salt and in brackish marshes and swamps (CNPS 2007). It is found at elevations from 0 to 25 meters.

The species is low growing and succulent with green-red stems and leaves. The flowers emerge at nodes and are inconspicuous, 3-4 mm, and funnel-shaped. They are green with white or pink margins. It flowers from April to October.

There are two CNDDB records of this species within five miles of the project site. Both observations occurred at Fagan Marsh in pickleweed saltmarsh over one mile southwest of the

project site. One of the observations is from a field collection in 1989 at the southeast end of the marsh. The other observation is from a field collection in 1932 that was observed again in 2009 on the northeastern end of the marsh.

The project site's seasonal wetlands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Lobb's aquatic buttercup (*Ranunculus lobbii)* - CRPR 4.2, IUCN: LC

Lobb's aquatic buttercup is an annual herb in the Ranunculaceae family that is native to California. It is known from Alameda, Contra Costa, Mendocino, Marin, Napa, Santa Cruz, San Mateo, Solano, and Sonoma counties. It is found in cismontane woodland, north coast coniferous forest, valley and foothill grassland, and vernal pools (CNPS 2021).

Lobb's aquatic buttercup is an aquatic plant which grows from 0.7 to 2.6 feet tall in shallow waters. The plant's leaves submerged in water are small and threadlike whereas the leaves that emerge from the water grow more robustly. This species blooms from February to May with small white flowers which have five petals and a cluster of stamens and pistils in the center (CNPS Calscape).

There are no CNDDB records for this species within five miles of the project site.

The project site's annual grasslands and seasonal wetlands provide moderate habitat for this species and though there are no known observations in the vicinity, they are known from the region. No observations of this plant were made during surveys conducted at the site. However, site surveys were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Two-fork clover (*Trifolium amoenum)* - FE, CRPR 1B.1

Two-fork clover is an annual herb that is native and endemic to California. The range of this species consists of the southern North Coast Ranges, the north Central Coast and the San Francisco Bay area. It is found in coastal bluff scrub, and valley and foothill grasslands, sometimes with serpentine soils in elevations between 5 and 160 meters. The species usually occurs in wetlands but is occasionally found in non-wetlands.

The species is erect in habit and hairy with widely obovate leaflets. The flower heads are 2.5 cm and rounded in shades of purple with white-tipped petals (Beidleman 2003). It blooms from April to June.

There are three CNDDB occurrences of this species within five miles of the project site. Two of the observations are described from a field collection in 1951-1952; one of the occurrences is

believed to be "possibly extirpated" because the plants were not found again during surveys in 1987 while the other observation "needs fieldwork". The remaining record is from a field collection in 1891 that was observed again in 1951-1952.

The project site's annual grasslands and seasonal wetlands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

Saline Clover (*Trifolium hydrophilum*) - CNPS 1B.2

Saline clover is a small, annual herb endemic to California. It is found in all central coast counties, from San Luis Obispo County to Sonoma County, except in San Francisco County. These counties include Alameda, Monterey, San Benito, San Luis Obispo, Napa, San Mateo, Santa Cruz, and Sonoma counties. Solano and possibly Colusa are the only inland counties with reported occurrences of this species (CNPS 2008). It is found in marshes and swamps, valley and foothill grassland, and often surrounding vernal pools.

The species has clover-like leaves with three leaflets 0.5 to 2 cm in length. The stipules of the upper leaves are tipped with bristles. The white-tipped, pink-purple flowers are 6.5 to 9 mm long and clustered in small heads that are 0.5 to 1.5 cm in diameter. It blooms from April to June. The upper petal, or banner, appears inflated. It encloses the 2 to 3 mm long fruit (legume) as it ripens (Hickman 1993).

There are two CNDDB occurrences of this species within five miles of the project site. One is described as extirpated by development in 1999. The remaining record was observed in 1993 in valley grassland along Suscol Creek east of Highway 221.

The project site's annual grasslands and seasonal wetlands provide marginal habitat for this species. No signs of the herb were observed on the project site during site surveys. However, the surveys of the site were conducted outside of the blooming period for this species. Therefore, a botanical survey should be conducted during its blooming period to ensure that this species does not occur on the project site and will not be impacted by the project.

B. Special-Status Habitats

1. Wetlands and Waters

a. Jurisdictions

As defined by the Army Corps of Engineers (Corps), "wetlands" are areas periodically or permanently saturated by surface or groundwater and typically support vegetation adapted to life in saturated (hydric) soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, promotion of groundwater recharge, and their water filtration and purification functions. "Other waters" include tributaries or drainage ditches which exhibit

perennial or ephemeral flow to a navigable waterway, wetland, or other significant water feature. Other waters may not necessarily be wetlands.

b. Delineation Methods

Boundaries between jurisdictional areas and uplands were investigated using the routine on-site assessment procedure, Section D, Subsection 2, page 57 of the 1987 "Corps of Engineers Wetlands Delineation Manual" (Environmental Laboratory 1987; hereafter the "Delineation Manual") as modified by the new Interim Arid West Supplement to the Delineation Manual (Environmental Laboratory 2006; hereafter the AWS). Dominant plant species, soil characteristics, and hydrology indicators were noted within a 10-foot by 10-foot plot at each sample point. Data point(s) were mapped onto two 1-inch to 250-foot scale maps (**Figures 2 and 3**). Wetlands were distinguished from uplands on this site by the presence of: 1) hydrophytic vegetation, 2) wetland hydrology, and 3) hydric soils (defined below. **Appendix E** contains delineation data sheets.

Hydrophytic Vegetation

Hydrophytic vegetation is dominated by plant species that can tolerate prolonged inundation or soil saturation during the growing season. More than 50% of the dominant species must be wetland indicators of FAC, FACW and OBL or outweigh them using a prevalence index for the vegetation to be considered hydrophytic. These wetland indicators, or hydrophytes, are listed in the Delineation Manual as OBL, FACW, and FAC. Other plants are listed as FACU or NI, and unlisted plants are considered as UPL. These abbreviations are defined as follows:

OBL	Obligate Wetland Plants	Plants that occur over 99% of the time in wetlands
FACW	Facultative Wetland Plants	Plants that occur 67% to 99% of the time in wetlands
FAC	Facultative Plants	Plants likely to occur 33% to 67% of the time in wetlands
FACU	Facultative Upland Plants	Plants that occur 1% to 33% of the time in wetlands, but which occur more frequently in uplands
NI	Non-indicator plants	These must be checked against the National Indicator List and could be changed to a wetter or drier status
UPL	Upland Plants	Plants that occur less than 1% of the time in wetlands

Note: The 3 facultative categories are subdivided by (+) and (-) modifiers. FAC+ species are considered to be wetter (have a greater estimated probability of occurring in wetlands) than FAC species. FAC- species are considered to be drier (have a lesser estimated probability of occurring in wetlands) than FAC species.

Hydric Soils

Hydric soils develop under the low oxygen conditions typical of prolonged inundation or saturation, and generally show visible indications of chemical reduction. The hydric nature of a soil is most often indicated by low matrix chromas of 0 to 1, or 2 with mottles, and is determined by comparing the wetted soil with Munsell Soil Color Charts. The hydric nature of a soil may also be indicated by the presence of manganese or iron nodules, or other more subtle characteristics.

Wetland Hydrology

Common wetland hydrology indicators demonstrate inundation or saturation and include observations of standing water, saturated soils, algal mats, water-matted detritus, and water stains on rocks or other objects. In evaluating these hydrology indicators some attention must be given to the frequency and duration of inundation, and the effects of recent weather, unusual flooding and climatic fluctuations. According to the AWS, an area must have "14 or more days of flooding or ponding or a water table 12 inches (30 centimeters) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50 percent or higher probability)" to satisfy the hydrology standard. The old standard (US Army Corps 1987 Manual) was that an area must have ponding for 5% of the growing season (18 days in California) or a water table at a depth equal to 80% of the root mass.

Jurisdictional Areas

1. Suscol Creek

Mapped Area: G

Total Area: 0.008 acres

A small amount of Suscol Creek, 49.5 linear feet, passes through the northeastern corner of the property. Suscol Creek at the project site is predominately cobble with earthen banks. Within the property, vegetation is absent from within the Creek. Suscol Creek is intermittent and is generally dry by mid to late spring. Suscol Creek has been mapped to the Ordinary High Water on the southern edge. The property line divides the Creek and forms the delineated northern edge.

Suscol Creek flows from the hills to the east, though the property, then enters the Napa River approximately 2,200 feet west of the property. To the west of the property, Suscol Creek has been channelized.

Non-jurisdictional areas

The remaining habitat within the property consists of uplands and non-Corps jurisdictional seasonal wetlands, ephemeral channels, and intermittent tributaries. The seasonal wetlands, ephemeral channels, and intermittent tributary are isolated and are neither connected nor adjacent to navigable waters, therefore they are outside of Corps jurisdiction. Though the seasonal wetlands ephemeral channels, and intermittent tributary, discussed below, do not meet the Corps jurisdictional requirements, they are regulated by Napa County and likely by the Regional Water Quality Control Board. These habitats are discussed in greater detail below.

1. Seasonal Wetlands

Data Points: 1, 4, 6, 8, 10, 12, 14, 16, 18, 17a

Areas: A, B, C, D, E, F, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, and Y

Total Area: 0.607 acre

The property contains 24 isolated, seasonal wetlands ranging in size from 4.2 square feet up to 0.144 acre (6,272 square feet). Each of the wetlands meet the Corps three technical criteria for wetlands, though because they are not connected or adjacent to navigable waters they are outside of the Corps jurisdiction. As discussed above, these areas are however regulated by the County and likely by the Regional Water Quality Control Board.

The majority of the sites wetlands occur in shallow depressions within the otherwise, generally, flat property. However, several of the wetlands (wetland areas W, X, and Y) occur in wide parts of the site's main ephemeral tributary. As well, several wetlands (wetland areas O, P, Q, R, and S) occur in what was formerly a channelized ditch, that was re-routed into the site's existing wetland mitigation area.

i. Vegetation

The vegetation within the seasonal wetlands is dominated by hdrophytic species. Common species within the wetlands includes: smooth willow-herb (*Epilobium campestre*, OBL), tall cyperus (*Cyperus erogrostis*, FACW), spike rush (*Eleocharis macrostachya*, OBL), rabbit's foot grass (*Polypogon monspeliensis*, FACW), aquatic pygmy weed (*Crassula aquatica*, OBL), little mouse tail (*Myosurus minimus*, OBL), Irish leaved rush (*Juncus xiphioides*, OBL), and hyssop looserife (*Lythrum hyssopifolia*, OBL).

Non-hydrophytic species also commonly occur in the seasonal wetlands, though with low relative cover. The non-hydrophitic species within the wetlands are similar to those in the adjacent uplands.

ii. Soils

The majority of the soils in the Nova North project site are Coombs gravely loam and the soils around Suscol Creek are bale clay loam. The soils in Nova South consist of haire clay loam in the east and haire loam in the west (NRCS, 2022). All of the soils mapped on the property are listed as hydric.

Most of the soils within the seasonal wetlands were found to be 10 YR 4/2. The majority of the soil samples contained redox features with a color of 7.5 YR 5/8. As well, many of the soil samples contained oxidized root channels in the upper three to 6 inches.

iii. Hydrology

All of the seasonal wetlands contained one of more wetland hydrology indicators. The majority the seasonal wetlands contained oxidized rhizospheres along living roots and reduced iron. Several of the wetlands also contained drainage patterns, surface soil cracks, and water-stained leaves. Wetland M contained drift deposits and surface water was present.

2. Ephemeral Tributaries

Areas: A1, B1, and C1

Area: 0.065 acre; 1,149 linear feet

The property contains three ephemeral tributaries all generally running north to south across the nova south portion of the property. Ephemeral tributary A1 runs northeast to southwest along the western edge of nova south then turns south and continues off of the property.

Ephemeral tributary B1 and C1 are located in the eastern part of the property. Ephemeral tributary B1 has been channelized into an earthen ditch that runs straight relatively parallel to the property's eastern border. Ephemeral tributary C1 joins ephemeral tributary then the two tributaries flow into the site's wetland mitigation area before continuing off site to the south.

All three tributaries receive ephemeral flows from groundwater and runoff from the adjacent landscape.

3. Uplands

Data Points: 2, 3, 5, 7, 9, 11, 13, 15, 17, 19, 14a, 15a

The remaining parts of the property, which make up the majority of the site, are uplands. The sample points in these areas failed to satisfy the three technical. Vegetation in these areas was dominated by UPL and FACU species with few FAC or FACW species; no OBL species were found in the uplands. Wetland soil and hydrology indicators were absent from the majority of the sample points. Three sample points (sample points 11, 13, and 15a) contained faint redox and/or reduced iron. However, the absence of wetland vegetation and site conditions indicated that these features were due to the placement of fill soils or other soil movement on site.

Within the upland sample points the vegetation was dominated by ripgut brome (*Bromus diandrus*; UPL), common vetch (*Vicia sativa*; FACW), wild oats (*Avena fatua*; UPL), Italian ryegrass (*Festuca perennis*; FAC), cut-leaf geranium (*Geranium dissectum*; UPL), soft chess (*Bromus hordeaceus*; FACU), and harding grass (*Phalaris aquatics*; FACU).

2. Other Special Status Habitats

There are four special status habitats with known occurrences within five miles of the project site: coastal brackish marsh, northern coastal salt marsh, northern vernal pool, and serpentine bunchgrass. None of these habitats are present on the project site.

Coastal brackish marsh and northern coastal salt marsh are known to occur along the edges of the Napa River to the southwest of the project site where there is salt and freshwater mixing. Northern vernal pool habitat is known from approximately 0.50 miles northeast of the site on the opposite, east, side of Highway 29 from the project site. The vernal pool habitat is characterized by a complex of shallow, vernally wet pools with native, annual forb vegetation. Serpentine bunchgrass habitat is located just under five miles to the southeast of the project site. The serpentine bunch grass habitat is characterized by a dominance of bunch grass species. The project site does not contain any of the special status habitats discussed above.

3. Wildlife Movement Corridors

Wildlife corridors are generally described as pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or human induced factors such as urbanization. The fragmentation of natural habitat creates isolated "islands" of vegetation that may not provide sufficient area or resources to accommodate sustainable populations for a number of species and thus, adversely affecting both genetic and species diversity. Corridors often partially or largely eliminate the adverse effects of fragmentation by 1) allowing animals to move between remaining habitats to replenish depleted populations and increase the gene pool available; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or species extinction; and 3) serving as travel paths for individual animals moving throughout their home range in search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges.

The majority of the project site is open grassland habitat with little canopy to provide refuge and cover for wildlife. The project site is also located between Devlin Road and Sanitary District Spray fields without clear linkages to open lands. As well, Suscol Creek and Sheehy Creek located just north and south of the project site contain water sources as well as shade, structure, and potential hiding spots for both predators and prey. These two Creeks provide much more obvious and likely movement corridors for wildlife moving through the area. The project site is therefore unlikely to be utilized as a wildlife movement corridor.

However, a small portion of Suscol Creek passes through the property, the project does not propose any work within the Creek, riparian woodland or within the Creek's top of bank.

Therefore the proposed project is unlikely to impact wildlife that may utilize Suscol Creek as a movement corridor.

4. Project Impacts

Grading for the lots, roads, and other infrastructure will impact a total of 12 isolated, seasonal wetlands for a total of 0.436 acres. The remaining tributaries and seasonal wetlands associated with the tributaries would be preserved. Any utility work within the easements that cross these tributaries, would be completed by jack-and-bore, so as not to result in any impacts to the tributaries. **Figures 6 and 7** illustrate the impacted and preserved areas as a result of the project.

5. Mitigation

The project proposes to mitigate impacts to the isolated seasonal wetlands at a 1:1 ratio of created to impacted. The proposed wetland mitigation areas will be created in areas adjacent to existing intermittent drainages as well as existing wetland mitigation areas. This will create a complex system of preserved and created tributaries, wetlands, riparian, and native grassland habitats along the natural drainages within the property. The potential wetland mitigation areas are shown in **Figure 8**. Currently, the mitigation areas are slightly larger than those that are impacted and will allow the mitigation wetlands to be refined within these areas.

IV. BIOLOGICAL RESOURCES

A. Regulatory Setting and Federal Framework

1. Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

1. Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.
2. Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.
3. Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.
4. Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3).

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. The Section 7 consultation process applies only to actions taken by federal agencies, or actions by private parties that require federal agency permits, approval, or funding (for example, a private landowner applying to the Corps for a permit). Section 7's consultation process is triggered by a determination of the "action agency" (i.e., the federal agency that is carrying out, funding, or approving a project) that the project "may affect" a listed species or critical habitat. If an action is likely to adversely

affect a listed species or designated critical habitat, formal consultation with the USFWS is required.

2. Federal Migratory Bird Treaty Act (FMBTA)

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

3. Federal Clean Water Act

Section 404

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into "waters of the United States" (33 CFR Part 320 *et seq.*). This requires project applicants to obtain authorization from the USACE prior to discharging dredged or fill material into any water of the United States. The "waters of the United States" are defined in federal regulations at 33 CFR section 328.3, and may include wetlands, ponds, drainages, creeks, streams, and other types of waterbodies, depending on whether any such aquatic feature meets current jurisdictional standards.

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to acquire authorization from the USACE prior to discharging or otherwise impacting "waters of the United States." This authorization is typically given by reference to compliance with an existing Nationwide Permit(s) or by issuance of a project-specific Individual Permit.

Section 401

Prior to issuance by a Section 404 authorization by the USACE, Section 401 of the federal Clean Water Act requires the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB) to certify, conditionally certify, or waive certification on the question of whether issuance of the USACE permit will violate water quality standards of the State. This certification (or waiver thereof) applies only to the proposed impacts to the "waters of the United States" that are at issue in the proposed Section 404 permit. Potential impacts to "waters of the State" that may not be jurisdictional for the USACE are addressed under the RWQCB's Porter-Cologne Water Quality Control Act statutory authority (see below).

B. State Framework

1. California Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of CDFG Code would be necessary (versus a Federal incidental take permit for Federal listed species). No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take."

State and federal incidental take permits are typically only authorized if applicants are able to demonstrate that impacts on the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review.

2. California Fish and Game Code

Section 4700

In accordance with California Fish and Game Code, Section 4700, "fully protected" mammals or parts thereof may not be taken or possessed (held in captivity) at any time (a) (1), except as provided in Section 2081.7. No provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected mammal, and no permits or licenses heretofore issued shall have any force or effect for that purpose. However, subject to certain notice requirements, the department may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species.

Sections 3503, 3503.5, 3511, and 3513

CDFG Code §§ 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of the nest or eggs of any bird. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Take of any migratory nongame bird is also prohibited, except in compliance with rules promulgated under the Migratory Bird Treaty Act.

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under CDFG Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

Section 1602

Pursuant to Section 1602 of the Fish and Game Code, CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream. CDFG's jurisdiction includes the outer extent of any riparian vegetation associated with the

stream. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing work in the stream.

3. Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The SWRCB and its several RWQCBs have interpreted this authority to extend to proposed fills of "waters of the State" that include all "waters of the United States" that are subject to the jurisdiction of the USACE, and any other "isolated" waters that are beyond the reach of the USACE claim of jurisdiction.

C. Applicable Local Restrictions

1. Napa County Code

18.108.025 - General provisions—Intermittent/perennial streams.

A. Applicability. The provisions of this section shall apply to those streams defined by Section 18.108.030. The final administrative determination of whether a particular watercourse is subject to the specific provisions of this section shall rest with the director.

B. Setback Requirements. In addition to any requirements of the floodway and floodplain regulations set forth in Title 16, construction of main or accessory structures, earthmoving activity, grading or removal of vegetation or agricultural uses of land (including access roads, avenues and tractor turnaround areas, or other improvements necessary for ongoing agricultural operations) as defined by Section 18.08.040 shall be prohibited within the stream setback areas established below unless specifically permitted in subsection (E) of this section, exempt pursuant to Section 18.108.050, or authorized by the commission through the granting of an exception in the form of a use permit pursuant to Section 18.108.040. "Ephemeral or intermittent streams" that are no included under the definition of a "stream" are subject to a 35-foot setback.

18.108.026 - General provisions—Wetlands.

Construction of main or accessory structures, earthmoving activity, land clearing or agricultural uses of land as defined by Section 18.08.040 shall be set back 50 feet from the delineated wetland boundary. In limited circumstances, the 50-foot setback may be reduced if recommended by a qualified professional biologist and approved by the director.

D. Environmental Analysis

1. CEQA Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the proposed project would have significant impacts on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFG or U.S. Fish and Wildlife Service (USFWS).
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFG or USFWS.

Have a substantial adverse effect on federally protected "wetlands" or "Waters of the U.S." as defined by Section 404 of the Clean Water Act or "Waters of the State" as defined by the Porter-Cologne Act (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.

V. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. Less Than Significant Impacts

1.0 Stormwater Quality and Restoration Activities within Creek Setback

Two types of activities may take place within the Suscol Creek setback; stormwater quality features such as a bioretention areas and swales and restoration/enhancement activities. Both of these activities are allowed by the County Code and restoration-related activities are required by the Code, though approval of a restoration/enhancement plan may be required by the County, and therefore are not a significant impact.

2.0 Loss of Ruderal and Grassland Habitat

The proposed project will result in the loss of non-native, grassland and ruderal habitats. Both of these habitats are dominated by weedy, non-native species, though a small number of common native plants are present. This habitat is relatively degraded due to extensive and lengthy disturbance. The loss of this habitat is not a significant impact as there is an abundance of non-native ruderal grassland habitats in the region. Similarly, impacts to common wildlife species that may potentially use this habitat are not significant as these species are common and capable of using adjacent lands.

These habitats provide relatively poor-quality, potential foraging habitat for Swainson's hawk. The site contains few trees that could provide potential nesting habitats and there are currently no known, active nests in the area. The Caltrans SR 29/221 Draft EIR noted that the loss of 22.71 acres of grassland vegetation "would not make a considerable contribution to the loss of nesting and/or foraging habitat for the Swainson's hawk" (Caltrans 2015). Studies of Swainson's hawks have shown that nesting birds can forage up to 18 miles from their nest (Estep 1989, Babcock 1993) or approximately 1,018 square miles of foraging habitat per nest. The project site would provide well under 1% of this area in a region that has large tracks of grasslands that provide better quality foraging habitat for this species.

While the populations of Swainson's hawks were once declining, their populations more recently have been expanding into additional areas outside of the Central Valley where they were historically concentrated. This recovery success and expansion of SWHA range has been well-documented in other environmental documents from projects in the region, which have not been required to provide SWHA mitigation for foraging habitat. While Swainson's hawk's nests are protected, foraging habitat mitigation has generally not been required in this area. LSA noted that they were "not aware of any projects in Napa County that have required mitigation for loss of Swainson's hawk foraging habitat" (LSA 2015). Therefore, given the relatively small amount of relatively poor-quality potential habitat, which would not make a significant contribution to the loss of foraging habitat for the Swainson's hawk, the loss of ruderal and grassland habitat is not a significant impact to this species.

B. Potentially Significant Impacts Before Mitigation

SPECIAL STATUS SPECIES

1.0 Development of the project could have a potentially significant impact on nesting raptors other migratory nesting birds

Impact Analysis

Suitable potential nesting habitat for Swainson's hawk, golden eagle, white tailed kite northern harrier and other raptors, as well as other migratory nesting birds, is present on the project site or directly adjacent to the project site. These birds are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nest, eggs, and young are protected under California CDFG Code §§3503, 3503.5, 3800, and 3513. Any project-related impacts on the nesting success of these species would be considered a significant adverse impact. Potential impacts from the proposed project include loss of nesting habitat, disturbance to nesting birds, and possibly death of adults and/or young. These impacts could be mitigated to a level considered less than significant by Mitigation Measure 1.0-1.

Mitigation Measure

1.0 – 1 If construction would commence anytime during the nesting/breeding season of the Swainson's hawk, golden eagle, white tailed kite northern harrier, or other raptor or bird species listed in the Migratory Bird Treaty Act (typically February 1 through September 15), a pre-construction survey of the project vicinity for nesting birds should be conducted. This survey should be conducted by a qualified biologist (experienced with the nesting behavior of bird species of the region) within 14 days prior to the commencement of construction activities that would occur during the nesting/breeding season. The intent of the survey should be to determine if active nests are present within or adjacent to the construction zone within approximately 250 feet. The surveys should be timed such that the last survey is concluded no more than two weeks prior to initiation of construction. If ground disturbance activities are delayed following a survey, then an additional pre-construction survey should be conducted such that no more than two weeks will have elapsed between the last survey and the commencement of ground disturbance activities.

If active nests are found in areas that could be directly or indirectly affected by the project, a no-disturbance buffer zone should be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted within them should be determined through consultation with the CDFW depending on the species, taking into account factors such as the following:

- Noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity;

- Distance and amount of vegetation or other screening between the construction site and the nest; and sensitivity of individual nesting species and behaviors of the nesting birds.

The buffer zone around an active nest should be established in the field with orange construction fencing or another appropriate barrier and construction personnel should be instructed on the sensitivity of nest areas. The qualified biologist should serve as a construction monitor during those periods when construction activities would occur near active nest areas of special status bird species to ensure that no impacts on these nests occur.

Level of Significance After Mitigation: Less Than Significant

1.1 Development of the project could have a potentially significant impact on the burrowing owl

Impact Analysis

As previously discussed, the site's annual grasslands are unlikely to support the burrowing owl due to the site's scarcity of available burrows, dominance of non-native and ruderal vegetation, and relatively dense clay soils. Though the site is unlikely to support the burrowing owl, the species is known from the region and there are nearby recorded observations. Therefore, although it is unlikely that burrowing owls would occur within the project site, a pre-construction survey as described below should be completed.

Mitigation Measure

1.1-1 Prior to the commencement of construction activities, a qualified biologist shall conduct a focused survey to determine if burrowing owls are present on the site. This survey should be conducted in accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation within 14 days prior to the commencement of construction activities. The survey should include the project site and environs. If a burrowing owl is identified on the project site all work shall be put on pause until the CDFW has been consulted regarding avoidance and minimization measures.

Level of Significance After Mitigation: Less Than Significant

1.2 Development of the project could have a potentially significant impact on the California red-legged frog

Impact Analysis

As noted previously, the project site does not contain breeding habitat for CRLF as none of the property's wetlands, tributaries, or creeks hold sufficient water. However, this species is known from the region so there is a small possibility that the species could pass through or otherwise utilize the property. Therefore, although CRLF are unlikely, a preconstruction survey should be conducted to ensure that no CRLF are in the vicinity when work commences.

Mitigation Measure

1.2-1 Within 48 hours prior to the commencement of construction activities, a qualified biologist shall conduct a preconstruction CRLF survey to ensure that no CRLF are located on or in proximity to the project site. If CRLF are found, the CDFW and USFW will be contacted to determine appropriate mitigation measures and work shall be halted until the consultations are completed.

Level of Significance After Mitigation: Less Than Significant

1.3 The proposed project could have a potentially significant adverse impact on special-status bat species.

Impact Analysis

The trees within the Property provide potentially suitable habitat for the pallid bat and other bat species. The removal of trees and shrubs from the project site could have a potentially significant impact on the pallid bat and other bat species. Therefore, the following mitigation measures shall be implemented to reduce potential impacts to this species to a level considered less than significant.

Mitigation Measures

1.3-1 For construction activities between October 16 and August 14: Prior to the commencement of construction activities, a qualified biologist shall conduct a focused survey to determine the presence/absence of any special status bat species. If bats are found then a plan for removal or exclusion between October 16 and August 14 will be developed by a qualified biologist and in consultation with CDFW.

For construction activities between August 15 and October 15: If trees are to be removed between August 15 and October 15, they will be trimmed and removed in a two-phased system conducted over two consecutive days under the supervision of a qualified biologist. The first day (afternoon), limbs, branches and trunks without cavities, crevices and deep bark fissures are removed by chainsaw. Limbs and trunks with cavities, crevices and bark fissures would be avoided. On the second day, the remainder of the tree may be removed.

Level of Significance After Mitigation: Less Than Significant

1.4 Development of the project could have a potentially significant impact on the western pond turtle

Impact Analysis

Though no western pond turtles have been observed within the Property, the site's ephemeral creek provides marginally suitable habitat for the species. Though it is unlikely that the species

would occur on the site, there is a small potential. Therefore, the following mitigation measures should be implemented to reduce potential impacts to a level considered less than significant.

Mitigation Measures

1.4-1 Within 5 days of construction, a qualified biologist shall conduct a preconstruction survey of all areas that would be impacted by construction activities that are within 100 feet of potential western pond turtle habitat. If any western pond turtles or eggs observed within the construction zone, the CDFW should be consulted.

Level of Significance After Mitigation: Less Than Significant

1.5 The proposed project could have a potentially significant adverse impact on special-status plant species.

Impact Analysis

The project site provides potentially suitable habitat for 14 special-status plant species. Though these species have not been observed on-site, directed bloom season surveys for spring- and summer-blooming species have not yet taken place. To prove absence of these species formal surveys must be conducted at the appropriate time of the year. Future development activities within the project site could result in the loss of this species. Until such time that formal surveys are conducted that demonstrate absence of these species, impacts to these species are regarded as potentially significant pursuant to CEQA. These impacts could be mitigated to levels considered less than significant by Mitigation Measure 1.5-1.

Mitigation Measure

1.5-1 Prior to County approval of any specific development, special status plant surveys shall be conducted by a qualified biologist in appropriate habitats during the appropriate period in which the species are most identifiable. These surveys shall be in compliance with all CDFW (2009), USFWS (1996), and CNPS (2001) published survey guidelines.

If the survey finds that there are no special-status plants on the property that would be impacted or within the proposed project site, then there would be no further mitigation and the project may proceed, provided all other applicable permits and authorizations are obtained for the project.

If special-status plant species are found, populations will be mapped and enumerated. If any populations are found within the proposed development area, project development plans shall consider avoidance to the extent practicable. If avoidance is not practicable while otherwise obtaining the project's objectives, then other suitable measures and mitigation shall be implemented as detailed below.

The following measures shall be implemented if special-status plants are found on the project site:

A. Initially the practicability of avoidance shall be evaluated as noted above.

B. If avoidance is not practicable, a mitigation plan shall be developed and approved by the County for implementation of steps 1 through 3 below prior to site disturbance.

The mitigation plan shall include the following elements:

1. Prior to construction within the project area, a qualified botanist shall collect the seeds, propagules, and top soils, or other part of the plant that would ensure successful replanting of the population elsewhere. The seeds, propagules, or other plantable portion of all plants shall be collected at the appropriate time of the year.
2. At least 2/3 of the seeds, propagules, or other plantable portion of all plants shall be planted at the appropriate time of year (late-fall months) within the protected creek setback area. Half of the seeds and top soils collected shall be appropriately stored and propagated at a native plant nursery to ensure germination. This material will be planted within the creek setback area during the appropriate season as part of the restoration work. Planting location, timing, collection methods etc… will be detailed in the mitigation plan required by Measure B above.
3. The applicant shall hire a qualified biologist to conduct annual monitoring surveys of the transplanted plant population for a five-year period and shall prepare annual monitoring reports reporting the success or failure of the transplanting efforts. These reports shall be submitted to the City no later than December 1st each monitoring year.
4. These steps shall be implemented prior to site disturbance.

A CNDDB form shall be filled out and submitted to CDFW for any special-status plant species identified within the project site.

In lieu of the above prescribed mitigation, as allowed in writing by the County, mitigation requirements may be satisfied via the purchase of qualified mitigation credits or the preservation of offsite habitat.

When implemented, these measures would reduce potentially significant adverse impacts on special-status plant species to a level considered less than significant.

Level of Significance After Mitigation: Less Than Significant

SPECIAL-STATUS HABITATS

2.0 The proposed project could have a potentially significant adverse impact on special –status wetland habitats

Impact Analysis

The proposed project will result in the loss of 0.436 acres of seasonal wetland habitat. Though these wetlands are unlikely to be protected by Section 404 of the Clean Water Act, they are protected by Napa County and the state and, therefore, the loss of or impacts to these habitats must be mitigated to ensure that the project does not result in a substantial adverse effect.

The majority of the wetlands that will be filled are very shallow depressions that have formed as a result of differential settling. They are primarily filled by direct rainfall and remain inundated for only a short time after. The vegetation within these wetlands is predominately weedy, non-native species. For these reasons, the wetlands that will be filled by the project have a relatively low habitat value. The project will preserve all of the ephemeral and intermittent channels within the property and the wetlands associated with these habitats including approximately 0.073 acres (1,198.5 lf) of channels and 0.171 acres of seasonal wetlands.

Mitigation Measure

2.0-1 The project will construct a total of at least 0.436 acres of seasonal wetlands or 1:1 mitigation, in order to mitigate for those that are impacted by the project. Prior to project approval, a mitigation plan describing the constructed wetland locations, construction methods, and monitoring and success criteria will be submitted to the applicable permitting agencies for review and approval.

When implemented, these measures would reduce potentially significant adverse impacts on special status habitats to a less than significant level.

Level of Significance After Mitigation: Less Than Significant

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APPENDIX A

List of Observed Vegetation

Vegetation Observed

Common Name	***Botanical Name***	**Native**
fiddleneck	*Amsinckia menziesii*	-
red orach	*Atriplex rosea*	-
wild oats	*Avena fatua*	-
coyote bush	*Baccharis pilularis*	Yes
little quaking grass	*Briza minor*	-
ripgut	*Bromus diandrus*	-
soft chess	*Bromus hordeaceus*	-
Italian thistle	*Carduus pycnocephalus*	-
bindweed	*Convulvulus arvensis*	-
doveweed	*Croton setigerus*	-
umbrella sedge	*Cyperus eragrostis*	Yes
stinkweed	*Dittrichia graveolens*	-
spikerush	*Eleocharis macrostachya*	Yes
parched willowherb	*Epilobium brachycarpum*	Yes
smooth boisduvalia	*Epilobium campestre*	Yes
storks bill	*Erodium botrys*	-
California poppy	*Eschscholzia californica*	Yes
blue gum	*Eucalyptus globulus*	-
vulpia	*Festuca bromoides*	-
rattail fescue	*Festuca myuros*	-
Italian ryegrass	*Festuca perennis*	-
stickyweed	*Galium aparine*	Yes
cut-leaved geranium	*Geranium dissectum*	-
prickly ox-tongue	*Helminthotheca echioides*	-
shortpod mustard	*Hirschfeldia incana*	-
Mediterranean barley	*Hordeum marinum*	-
hare barley	*Hordeum murinum*	-
cats ear	*Hypochaeris radicata*	-
toad rush	*Juncus bufonius*	Yes
slender rush	*Juncus occidentalis*	Yes
sharpleaf cancerwort	*Kixia elantine*	-
prickly lettuc	*Lactuca serriola*	-
small lupine	*Lupinus bicolor*	Yes
hyssopy loosetrife	*Lythrum hyssopifolia*	-
Harding grass	*Phalarus aquatica*	-
plantain	*Plantego lanceolata*	-
cottonwood	*Populus fremontii*	Yes

coast live oak	*Quercus agrifolia*	Yes
radish	*Raphanus sativus*	-
Himalayan blackberry	*Rubus armeniacus*	-
curly dock	*Rumex crispus*	-
common groundsel	*Senecio vulgare*	-
sonchus	*Sonchus asper*	-
purple needlegrass	*Stipa pulchra*	Yes
medusa head grass	*Taeniatherum caput-medusae*	-
sun cups	*Taraxia ovata*	Yes
sock destroyer	*Torilis arvensis*	-
poison oak	*Toxicodendron diversalobum*	Yes
oyster root	*Tragopogon porrifolius*	-
rose clover	*Trifolium hirtum*	-
slender vetch	*Vicia hassei*	-
spring vetch	*Vicia sativa*	-
winter vetch	*Vicia villosa*	-

Within Suscol Creek riparian zone

buckeye	*Aesculus californica*	Yes
mugwort	*Artemesian douglasiana*	Yes
wild cucumber	*Marah fabaceus*	Yes
goldenback fern	*Pentagramma triangularis*	Yes
cherry plum	*Prunus cerasifera*	-
valley oak	*Quercus lobata*	Yes
black locust	*Robinia psuedoacacia*	-
yellow willow	*Salix lasiandra*	Yes
sandbar willow	*Salix lasiolepis*	Yes
bee plant	*Scrophularia californica*	Yes
California bay	*Umbellularia californica*	Yes
wild grape	*Vitis californica*	Yes

APPENDIX B

List of Observed Wildlife

Wildlife Observed Onsite

	COMMON NAME	SCIENTIFIC NAME
Birds	American Crow	*Corvus brachyhynchos*
	Wrentit	*Chamaea fasciata*
	Savanah sparrow	*Passerculus sandwichensis*
	Turkey vulture	*Cathartes aura*
	Black pheobe	*Sayornis nigricans*
	California towhee	*Melozone crissalis*
	Red-tailed hawk	*Buteo jamaicensis*
	Scrub jay	*Aphelocoma californica*
	Lesser goldfinch	*Spinus psaltria*
Mammals	Striped skunk (carcass)	*Mephitis mephitis*
	Jack rabbit	*Lepus californicus*
Reptiles	Western fenced lizard	*Sceloporus occidentalis*

APPENDIX C

State and Federal Species Lists

APPENDIX D

Definitions for Special Status Species Designations

APPENDIX E

Delineation Data Sheets