



Biological Resources Assessment

Silver Eagle Road Subdivision

Sacramento County, California

September 2024



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Attachments:

- Attachment A. Silver Eagle Road Subdivision Illustrative Site Plan
- Attachment B. IPaC Trust Resource Report for the Study Area

Attachment C. CNPS Inventory of Rare and Endangered Plants Query for the "Rio Linda, California" USGS
Quadrangle and Eight Surrounding Quadrangles
Attachment D. Representative Site Photos

1.0 INTRODUCTION

This report presents the results of a Biological Resources Assessment (BRA) conducted for the approximately 8.4-acre Silver Eagle Road Subdivision (Study Area) conducted by Madrone Ecological Consulting, LLC (Madrone). The Study Area is located in the City of Sacramento, south of Silver Eagle Road, north of Ford Road, and east of Western Avenue (**Figure 1**), in Del Paso Land Grant, in Township 9 North, Range 5 East (MDB&M) of the "Rio Linda, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2022).

1.1 Project Description

The Silver Eagle Road Subdivision Project (Project) proposes to develop 42 single-family homes, and associated infrastructure within the Study Area. Offsite improvements include frontage improvements to Ford Road and Western Avenue and utility connections to the existing City of Sacramento (City) utilities within the existing footprint of these roads. The current site plan is included as **Attachment A**.

2.0 REGULATORY SETTING

This section describes federal, state and local laws and policies that are relevant to this assessment of biological resources.

2.1 Federal Regulations

2.1.1 *Federal Endangered Species Act*

The Federal Endangered Species Act (FESA) of 1973 protects species that are federally listed as endangered or threatened with extinction. FESA prohibits the unauthorized "take" of listed wildlife species. Take includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such activities. Harm includes significant modifications or degradations of habitats that may cause death or injury to protected species by impairing their behavioral patterns. Harassment includes disruption of normal behavior patterns that may result in injury to or mortality of protected species. Civil or criminal penalties can be levied against persons convicted of unauthorized "take." In addition, FESA prohibits malicious damage or destruction of listed plant species on federal lands or in association with federal actions, and the removal, cutting, digging up, damage, or destruction of listed plant species in violation of state law. FESA does not afford any protections to federally listed plant species that are not also included on a state endangered species list on private lands with no associated federal action.

2.1.2 *Clean Water Act, Section 404*

Section 404 of the Federal Clean Water Act requires that a Department of the Army permit be issued prior to the discharge of dredged or fill material into waters of the United States, including some wetlands. The U.S. Army Corps of Engineers (USACE) administers this program, with oversight from the U. S. Environmental

Protection Agency. As of the date of this document, waters of the United States (waters of the U.S.) are defined as follows (40 CFR 120.2):

1. Waters which are:
 - i. Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - ii. The territorial seas; or
 - iii. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under item (5) below;
3. Tributaries of waters identified in items (1) or (2) above that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
 - i. Waters identified in item (1) of this section; or
 - ii. Relatively permanent, standing or continuously flowing bodies of water identified in items (2) or (3) above and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in items (1) or (3) above.

Under the current definition of waters of the U.S., "adjacent" means *having a continuous surface connection*.

Waters subject to regulation under Section 404 are referred to as "jurisdictional waters".

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, any native migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11.). Likewise, Section 3513 of the California Fish & Game Code prohibits the "take or possession" of any migratory non-game bird identified under the MBTA. Therefore, activities that may result in the injury or mortality of native migratory birds, including eggs and nestlings, would be prohibited under the MBTA.

2.1.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

2.2 State Regulations

2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires evaluations of project effects on biological resources. Determining the significance of those effects is guided by Appendix G of the CEQA guidelines. These evaluations must consider direct effects on a biological resource within the project site itself, indirect effects on adjacent resources, and cumulative effects within a larger area or region. Effects can be locally important but not significant according to CEQA if they would not substantially affect the regional population of the biological resource. Significant adverse impacts on biological resources would include the following:

- Substantial adverse effects on any species identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) (these effects could be either direct or via habitat modification);
- Substantial adverse impacts to species designated by the California Department of Fish and Game (2009) as Species of Special Concern;
- Substantial adverse effects on riparian habitat or other sensitive habitat identified in local or regional plans, policies, or regulations or by CDFW and USFWS;
- Substantial adverse effects on federally protected wetlands defined under Section 404 of the Clean Water Act (these effects include direct removal, filling, or hydrologic interruption of marshes, vernal pools, coastal wetlands, or other wetland types);
- Substantial interference with movements of native resident or migratory fish or wildlife species population, or with use of native wildlife nursery sites;
- Conflicts with local policies or ordinances protecting biological resources (e.g. tree preservation policies); and
- Conflict with provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

2.2.2 State Endangered Species Act

With limited exceptions, the California Endangered Species Act (CESA) of 1984 protects state-designated endangered and threatened species in a way similar to FESA. For projects on private property (i.e. that for which a state agency is not a lead agency), CESA enables CDFW to authorize take of a listed species that is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code Section 2081).

2.2.3 California Fully Protected Species

The State of California first began to designate species as “fully protected” prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to

those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code, § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit, relocation of the bird species for the protection of livestock, or if they are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (NCCP).

2.2.4 California Species of Special Concern

The Species of Special Concern (SSC) are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the federal or California ESAs or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.

SSC are typically associated with habitats that are threatened. Project-related impacts to SSC, state-threatened or endangered species are considered "significant" under CEQA.

2.2.5 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

2.2.6 Clean Water Act, Section 401

Section 401 of the Clean Water Act requires any applicant for a 404 permit in support of activities that may result in any discharge into waters of the United States to obtain a water quality certification with the Regional Water Quality Control Board (RWQCB). This program is meant to protect these waters and wetlands by ensuring that waste discharged into them meets state water quality standards. Because the water quality certification program is triggered by the need for a Section 404 permit (and both programs are a part of the Clean Water Act), the definition of waters of the United States under Section 401 is the same as that used by the USACE under Section 404.

2.2.7 California Water Code, Porter-Cologne Act

Waters that are not considered waters of the U.S. may be considered waters of the State of California (waters of the State) under the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne, from Division 7 of the California Water Code, requires any person discharging waste or proposing to discharge waste that could affect the quality of waters of the state to file a report of waste discharge (RWD) with the RWQCB. The RWQCB can waive the filing of a report, but once a report is filed, the RWQCB must either waive or adopt water discharge requirements (WDRs). Waters of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the state of California.

2.2.8 California Fish and Game Code, Section 1600 – Streambed and Lake Alteration

The CDFW is responsible for conserving, protecting, and managing California’s fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code, Section 1602, requires notification to CDFW of any proposed activity that may substantially modify a river, stream, or lake. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- substantially divert or obstruct the natural flow of any river, stream or lake;
- substantially change or use any material from the bed, channel, or bank of any river, stream, or lake;
- or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

For the purposes of Section 1602, rivers, streams and lakes include those that are dry for periods of time as well as those that flow year-round. If notification is required, and CDFW believes the proposed activity is likely to substantially adversely affect fish and wildlife resources, it will require that the parties enter into a Lake or Streambed Alteration Agreement (LSAA).

2.2.9 California Fish and Game Code, Section 3503.5 - Raptor Nests

Section 3503.5 of the Fish and Game Code makes it unlawful to take, possess, or destroy hawks or owls, unless permitted to do so, or to destroy the nest or eggs of any hawk or owl.

2.3 Local Regulations

2.3.1 City of Sacramento 2040 General Plan

The 2040 General Plan (General Plan) for the City of Sacramento (City of Sacramento 2024a) has established citywide goals and policies to guide the location, design, and quality of development to protect biological resources. Specific policies have been developed to regulate and guide the following:

ERC-1.1 Clean Water Programs
ERC-1.2 Clean Watershed
ERC-2.1 Conservation of Open Space Areas
ERC-2.2 Biological Resources
ERC-2.4 Native and Climate-Adapted Plants
ERC-2.6 Wetland Protection
ERC-2.7 Annual Grasslands
ERC-2.8 Wildlife Corridors
ERC-2.9 Habitat Assessments
ERC-2.10 Agency Coordination
ERC-1.3 Runoff Contamination
ERC-6.3 Floodplain Capacity
LUP-1.11 Coordinate to Protect Farmland

As a component of the General Plan a Master Environmental Impact Report (MEIR) was prepared (City of Sacramento reference 2024b)

2.3.2 City of Sacramento Tree Preservation Ordinance

The City of Sacramento Tree Ordinance (City Code 12.56) specifies that a permit is required to perform regulated work on "City Trees" or "Private Protected Trees". City trees are trees partially or completely located in a City park, on City-owned property, or on a public right-of-way, including any street, road, sidewalk, park strip, mow strip or alley. Private protected trees are defined as trees designated to have special historical value, special environmental value, or significant community benefit, and that are located on private property. Private protected trees are:

- All native trees at 12-inch diameter standard height (DSH). Native trees include Coast, Interior, Valley and Blue Oaks, CA Sycamore and Buckeye.
- All trees at 32-inch DSH with an existing single-family or duplex dwelling.
- All trees at 24-inch DSH on undeveloped land or any other type of property such as commercial, industrial, and apartments.

Permits are required prior to removal of protected trees, or work on or within the root zone of protected trees. Removal of private protected trees typically requires replacement or payment of on-lieu fees.

3.0 METHODOLOGY

3.1 Literature Review

A list of special-status species with potential to occur within the Study Area was developed by conducting a query of the following databases:

- California Natural Diversity Database (CNDDDB) (CNDDDB 2024) query of the Study Area and all areas within 5 miles of the Study Area (**Figure 3**);
- USFWS Information for Planning and Conservation (IPaC) (USFWS 2024a) query for the Study Area (**Attachment B**);
- California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (CNPS 2024) query of the "Rio Linda, California" USGS topo quadrangle, and the eight surrounding quadrangles (**Attachment C**); and
- Western Bat Working Group (WBWG) Species Matrix (WBWG 2017).

In addition, any special-status species that are known to occur in the region, but that were not identified in any of the above database searches were also analyzed for their potential to occur within the Study Area.

The *Aquatic Resources Delineation Report for Silver Eagle 6* (Madrone 2017) and the *Arborist Survey Report Silver Eagle 6* (Madrone 2024) were reviewed and incorporated into this document as appropriate.

For the purposes of this Biological Resources Assessment, special-status species is defined as those species that are:

- listed as threatened or endangered, or proposed or candidates for listing by the USFWS or National Marine Fisheries Service;
- listed as threatened or endangered and candidates for listing by CDFW;
- identified as Fully Protected species or species of special concern by CDFW;
- identified as Medium or High priority species by the WBWG (WBWG 2017); and
- plant species considered to be rare, threatened, or endangered in California by the CNPS and CDFW [California Rare Plant Rank (CRPR) 1, 2, and 3]:
 - CRPR 1A: Plants presumed extinct.
 - CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere.
 - CRPR 2A: Plants extirpated in California, but common elsewhere.
 - CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
 - CRPR 3: Plants about which the CNPS needs more information – a review list.

3.2 Field Surveys

Madrone senior biologist Bonnie Peterson conducted a field survey of the Study Area on 6 August 2024, to assess the suitability of habitats on-site to support special-status species. Meandering pedestrian surveys were performed on foot throughout the Study Area. Vegetation communities were classified in accordance with *The Manual of California Vegetation, Second Edition* (Sawyer, Keeler-Wolf and Evens 2009), primarily accessed online (CNPS 2024), and plant taxonomy was based on the nomenclature in the Jepson eFlora (Jepson Flora Project 2024). Results of the site visit conducted by Bonnie Peterson in preparation of the delineation of aquatic resources on 7 December 2017 and by Madrone ISA Certified Arborist Daria Snider (#WE-8666A) conducted to prepare the arborist survey on 6 July 2023 were also incorporated into this report.

4.0 EXISTING CONDITIONS

The Study Area is a vacant lot that is disked annually. Surrounding land use includes existing medium density residential to the south, residential and undeveloped fallow fields to the north and east, and a regional bike trail, railroad, and Steelhead Creek riparian corridor to the west. The Study Area is relatively flat with elevation ranges of 25-35 feet above mean sea level, sloping gently towards a now defunct drainage bisecting the site from the northeast corner to southwest. Surrounding properties to the north and east are rural residential with low-density single-family homes to the south.

A review of historic aerials indicates that the majority of the Study Area has been vacant since before 1947. The northwestern corner of the site contained a building and storage yard installed before 1964 and removed before 1993 when the San Juan Road overpass was installed through the former building site.

Existing vegetation within the Study Area includes non-native annual grasses and forbs including immature brome (*Bromus* sp.) and oat (*Avena* sp.), johnsongrass (*Sorghum halepense*), prickly lettuce (*Lactuca serriola*), turkey mullen (*Croton setiger*), Bermuda grass (*Cynodon dactylon*) and alkali mallow (*Malvella leprosa*) with a grove of blue oak (*Quercus douglassii*) and interior live oak (*Q. wislizenii*) located in the southeast corner. A remnant drainage channel bisects the Study Area and vegetation includes tall nutsedge (*Cyperus eragrostis*), Italian ryegrass (*Festuca perennis*), and hyssop loosestrife (*Lythrum hyssopifolia*). The channel no longer appears to flow continuously through the Study Area, and is now functioning as a seasonal wetland.

The Study Area is located in the *Steelhead Creek Watershed* (HUC 1802011103) (USGS 1978). Surface water in the Study Area is driven by storm water runoff. A defunct drainage channel bisects the Study Area draining from the northeast corner to the southwest corner of the site and while the channel contains isolated areas of ponding. Both the upstream and downstream culvert were plugged with sediment and trash, and there is no evidence of significant run-on or run-off from the Study Area. The USACE issued a preliminary jurisdictional determination verifying that this feature represented 0.11 acres/399 linear feet of seasonal wetland swale (USACE 2018) which may fall under the jurisdiction of the USACE. While Steelhead Creek is located approximately 350-feet west of the Study Area, and is separated from the Study Area by a railroad grade and levee and there is no hydrological connectivity between the Study Area and Steelhead Creek.

Wetlands delineated within the Study Area are depicted in **Figure 4** and vegetation types in **Figure 5**. Representative site photos are included in **Attachment D**.

4.1 Terrestrial Vegetation Communities

4.1.1 Ruderal

Land cover within the majority of the Study Area, 6.5-acres, is ruderal. This community is primarily unvegetated with a low cover of non-native annual grasses and forbs including immature brome (*Bromus* sp.) and oat (*Avena* sp.), johnsongrass (*Sorghum halepense*), prickly lettuce (*Lactuca serriola*), turkey mullen (*Croton setiger*), Bermuda grass (*Cynodon dactylon*) and alkali mallow (*Malvella leprosa*) with a grove of blue oak (*Quercus douglassii*) and interior live oak (*Q. wislizenii*) located in the southeast corner. A remnant drainage channel bisects the Study Area and vegetation includes tall nutsedge (*Cyperus eragrostis*), Italian rygrass (*Festuca perennis*), and hyssop loosestrife (*Lythrum hyssopifolia*). A grove of blue oak (*Quercus douglasii*) and Valley oak (*Quercus lobata*) is located in the southeast corner.

4.1.2 Developed

Developed areas include Ford Road and Western Avenue. These two roadways are paved and include sparse ruderal vegetation along the perimeter.

4.2 Aquatic Resources

A protocol-level aquatic resources delineation was conducted and a report submitted to the USACE for a preliminary jurisdictional determination by Madrone (Madrone 2017a). The USACE issued a preliminary jurisdictional determination on 21 May 2018 verifying that the Study Area contains 0.111 acres (399 linear feet) of seasonal wetland swale, some or all of which may fall under the jurisdiction of the USACE. Aquatic resources mapped within the Study Area are depicted in **Figure 4**. A description of the seasonal wetland swale is included below.

4.2.1 Seasonal Wetland Swale

A remnant seasonal wetland swale (0.111 acres) is located within the Study Area. Seasonal wetlands are depressional wetlands that pond water seasonally. The seasonal wetland swale is the remnant of a drainage features that previously flowed from the northeast to the southwest corner through the Study Area. The upstream culvert is partially blocked with sediment and the upstream watershed is limited to roadside drainage from Silver Eagle Road. The feature lacks sufficient hydrology for surface water ponding and is vegetated with opportunistic wetland plant species including tall nutsedge, Italian rygrass, and hyssop loosestrife. No evidence of scour or ordinary high water mark are present and hydrology indicators are limited to biotic crust, soil cracking, and oxidized rhizospheres. The channel no longer appears to flow continuously through the Study Area, and has degraded to an isolated seasonal wetland swale that is

saturated for sufficient period to support opportunistic wetland species. It is Madrone's opinion that the seasonal wetland swale is not USACE jurisdictional based current regulatory guidance. A formal determination on jurisdiction can be obtained by requesting an approved jurisdictional determination from the USACE.

4.3 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2024), three soil mapping units occur within the Study Area (**Figure 2**): (161) Jacktone clay, drained, 0 to 2% slopes; (211) San Joaquin fine sandy loam, 0 to 3% slopes; and (220) San Joaquin-Urban land complex, 0 to 3 % slopes. Jacktone clay is listed by the NRCS as a hydric soil (NRCS 2017), as well as a non-saline to very slightly saline soil. The San Joaquin soils are not listed as hydric, nor do they typically contain hydric minor components.

5.0 RESULTS

Table 1 provides a list of special-status species that were evaluated, including their listing status, habitat associations, and their potential to occur in the Study Area. The following set of criteria was used to determine each species' potential for occurrence on the site:

- Present: Species occurs on the site based on CNDDDB records, and/or was observed on the site during field surveys.
- High: The site is within the known range of the species and suitable habitat exists.
- Moderate: The site is within the known range of the species and very limited suitable habitat exists.
- Low: The site is within the known range of the species and there is marginally suitable habitat or the species was not observed during protocol-level surveys conducted on-site.
- Absent/No Habitat Present: The site does not contain suitable habitat for the species, the species was not observed during protocol-level floristic surveys conducted on-site, or the site is outside the known range of the species.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Plants</i>				
<i>Astragalus tener</i> var. <i>ferrisiae</i> Ferris' milk-vetch	--	CRPR 1B.1	Occurs in meadows, foothill and valley grasslands. Usually found in subalkaline or dry adobe soils (elevation 5'-245').	No Habitat Present. The Study Area is outside the documented range of the species and lacks subalkaline or dry adobe soils.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot	--	CRPR 1B.2	Prefers chaparral, cismontane woodland, and valley and foothill grasslands. Often associated with serpentine soils (elevation 150'-5,100').	No Habitat Present. The Study Area does not support suitable chaparral, woodland, or grassland habitat and does not contain serpentine soils.
<i>Chloropyron molle</i> ssp. <i>hispidum</i> Hispid bird's-beak	--	CRPR 1B.1	Prefers seasonally flooded, saline-alkali soils. Occurs in valley and foothill grasslands, meadows and seeps (elevation 5'-510').	No Habitat Present. No alkaline soils are present on-site.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Downingia pusilla</i> Dwarf downingia	--	CRPR 2B.2	Mesic areas in valley and foothill grassland, and vernal pools (elevation 3' – 1,460').	Low. The Study Area is hydrologically isolated from known occurrences, the closest being CNDDDB occ. 1677 almost 5-miles north of the Study Area. The only potential aquatic habitat within the Study Area is the highly degraded seasonal wetland swale with low cover of primarily non-native and opportunistic wetland plant species. This swale does not include any vernal pool species typically associated with dwarf downingia.
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	--	CE, CRPR 1B.2	Vernal pools and margins of lakes/ponds on clay soils (elevation 35' - 7,790').	No Habitat Present. No vernal pools, lakes, ponds, or clay soils are located in the Study Area. The seasonal wetland swale on-site does not have a sufficient hydroperiod to support this species.
<i>Hibiscus lasiocarpus var. occidentalis</i> Woolly rose-mallow	--	CRPR 1B.2	Occurs in freshwater wetlands/marshes including edges. Often in riprap on sides of levees (elevation 0'-395').	No Habitat Present. The Study Area lacks suitable marsh, pond, or levee habitat.
<i>Juncus leiospermus var. ahartii</i> Ahart's dwarf rush	--	CRPR 1B.2	Occurs along edges of vernal pool and other seasonally ponded features (elevation 100'-750').	Low. The Study Area does not support vernal pools and the seasonal wetland swale on-site does not have a sufficient hydroperiod to support this species.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Juncus leiospermus</i> var. <i>leiospermus</i> Red Bluff dwarf rush	--	CRPR 1B.1	Occurs in vernal mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools (elevation 115'-4,100').	No Habitat Present. The Study Area is outside of the geographic and elevation range and does not support suitable grassland or vernal pool habitat for this species. The nearby CNDDDB occurrence is considered to be erroneous (CNDDDB 2024).
<i>Legenere limosa</i> Legenere	--	CRPR 1B.1	Occurs in vernal pools (elevation 5'-2,885').	No Habitat Present. The Study Area does not support vernal pools and the seasonal wetland swale on-site does not have a sufficient hydroperiod to support this species.
<i>Orcuttia viscida</i> Sacramento Orcutt grass	FE	CE, CRPR 1B.1	Occurs in vernal pools (elevation 100'-330').	No Habitat Present. The Study Area does not support vernal pools and the seasonal wetland swale on-site does not have a sufficient hydroperiod to support this species.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	--	CRPR 1B.2	Occurs in emergent marsh habitat, typically associated with drainages, canals, or irrigation ditches (elevation 0' - 2,135').	No Habitat Present. No drainage, canals or irrigation ditches occur within the Study Area. The remnant seasonal wetland swale lacks sufficient hydrology to support this species.
<i>Symphotrichum lentum</i> Suisun Marsh aster	--	CRPR 1B.2	Occurs in fresh and salt water marshes, often associated with blackberries, cattails, and bulrush (elevation 0'-10').	No Habitat Present. No marshes occur within the Study Area.

Table 1. Special-Status Species with Potential to Occur within the Study Area

<i>Scientific Name</i> (Common Name)	Federal Status ¹	State Status ¹	Habitat Requirements	Potential for Occurrence
Invertebrates				
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT	--	Occurs in vernal pools.	No Habitat Present. The Study Area does not contain vernal pools. The seasonal wetland swale lacks sufficient surface water ponding to support this species. The closest known occurrence is CNDDDB occ. 145 along Natomas East Main Drainage Canal, west of Western Ave. and north of Silver Eagle Road.
<i>Danaus plexippus</i> Monarch butterfly	FC	--	Migratory species; most prevalent in the Central Valley in summer and early fall. Dependent upon milkweed (<i>Asclepias</i> species) plants as their exclusive larval host.	No Habitat Present. The Study Area is dominated by ruderal vegetation and no milkweed have been observed. The Study Area lacks a population of host plants necessary to support this species.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT	--	Dependent upon elderberry (<i>Sambucus</i> species) plant as primary host species.	No Habitat Present. The Study Area does not support elderberry shrubs host plants necessary to support this species.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE	--	Occurs in vernal pools.	No Habitat Present. The Study Area does not support vernal pools and the seasonal wetland swale lacks sufficient surface water ponding to support this species.
Fish				

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Acipenser medirostris</i> Green Sturgeon	FT	--	Green sturgeon live much of each year in ocean waters along the coasts of California, Oregon, and Washinton. In the summer, they often enter bays or brackish estuaries to feed. This anadromous species migrates in March-June from saltwater into the freshwater reaches of larger coastal rivers to spawn. Green Sturgeon spawn in cool, deep, swift flowing river reaches over gravel and cobble bottoms. Juveniles grow rapidly and migrate down-river after about a year, taking up residence in the freshwater region of the estuary.	No Habitat Present. The Study Area does not contain any watercourses.
<i>Oncorhynchus mykiss irideus</i> Steelhead – Central California Coast Distinct Population Segment (DPS)	FT	--	Anadromous species requiring freshwater water courses with gravelly substrates for breeding. The young remain in freshwater areas before migrating to estuarine and marine environments.	No Habitat Present. The Study Area does not contain any watercourses.
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	--	CSC	Inhabits slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging opportunities for young.	No Habitat Present. The Study Area does not contain any watercourses.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Spirinchus thaleichthys</i> Longfin smelt	FC	CT	Prefers moderately saline water and may be found in major bays and estuaries from San Francisco Bay northward. Inhabits Bay waters throughout the summer, moving into the lower reaches of the rivers that flow into these bays in the fall to spawn.	No Habitat Present. The Study Area does not contain any watercourses.
Reptiles				
<i>Actinemys marmorata</i> Northwestern pond turtle	FC	CSC	Occurs in ponds, rivers, streams, wetlands, and irrigation ditches with associated marsh habitat.	No Habitat Present. The Study Area does not contain any watercourses and the seasonal wetland swale lacks sufficient hydroperiod to support this species. Upland nesting migration from Steelhead Creek is discouraged by the presence of a levee, roadway, and ongoing transient activity and camping.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Thamnophis gigas</i> Giant garter snake	FT	CT	Occurs in rivers, canals, irrigation ditches, rice fields, and other aquatic habitats with slow moving water and heavy emergent vegetation.	No Habitat Present. The Study Area does not contain any watercourses and the seasonal wetland swale lacks sufficient hydroperiod to support this species. Upland estivation migration from Steelhead Creek is discouraged by the presence of a levee, roadway, and ongoing transient activity and camping.
Birds				
<i>Agelaius tricolor</i> Tricolored blackbird	--	CE, CSC	Colonial nester in cattails (<i>Typha</i> species), bulrush (<i>Schoenoplectus</i> species), or blackberry (<i>Rubus</i> species) associated with marsh habitats. Nesting habitat used by tricolored blackbirds may be as small as 0.01 acres (Airola 2021) adjacent to suitable foraging habitat such as grazed grasslands, irrigated pasture, shallow wetlands, agricultural fields (Cruse and DeHaven 1977; Skorupa et al. 1980; Meese 2013; Beedy et al. 2023).	No Habitat Present. The Study Area lacks suitable nesting or foraging habitat for this species.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Athene cunicularia</i> Burrowing owl	--	CSC	Nests in abandoned ground squirrel (<i>Otospermophilus beecheyi</i>) burrows associated with open grassland habitats.	Low. Ongoing disturbance from transients and proximity of domestic pets reduces habitat suitability for this species. No Burrowing owl, sign, or habitat was observed during multiple site visits conducted during the breeding and non-breeding season. The closest known occurrence is approximately 0.8 miles northwest of the Study Area (CNDDDB Occ. 841).
<i>Buteo swainsoni</i> Swainson's hawk	--	CT	Nests in large trees, preferably in riparian areas. Forages in fields, cropland, irrigated pasture, and grassland near large riparian corridors.	Moderate. The trees on-site and in the Steelhead Creek corridor approximately 250-feet to the west provide suitable nesting habitat. The ruderal habitats within the Study Area are poor quality foraging due to a lack of cover and burrows to support dense rodent populations.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FT	CE	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, adjacent to slow-moving waterways, backwaters, or seeps.	No Habitat Present. The Study Area lacks riparian habitat.

Table 1. Special-Status Species with Potential to Occur within the Study Area

Scientific Name (Common Name)	Federal Status¹	State Status¹	Habitat Requirements	Potential for Occurrence
<i>Elanus leucurus</i> White-tailed kite	--	CFP	Open grasslands, fields, and meadows are used for foraging. Isolated trees in close proximity to foraging habitat are used for perching and nesting.	Moderate. The trees on-site and in the Steelhead Creek corridor to the west provide suitable nesting habitat. The ruderal habitats within the Study Area are poor quality foraging due to a lack of cover and burrows to support rodents.
<i>Melospiza melodia mailliardi</i> Song sparrow "Modesto" population	--	CSC	Nests in emergent freshwater marshes dominated by bulrush and cattails as well as riparian willow (<i>Salix</i> species) thickets. This species also nests in riparian forests of valley oak (<i>Quercus lobata</i>) with a blackberry (<i>Rubus</i> species) understory, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites (Shuford and Gardali 2008).	No Habitat Present. No emergent wetland vegetation or riparian forests are present within the Study Area. This species may utilize the Steelhead Creek Corridor approximately 250-feet west of the Study Area.
<i>Riparia riparia</i> Bank swallow	--	CT	Colonial nester preferring vertical cliffs and banks with fine textured/sandy soils associated with riparian zones along streams, rivers, and lakes.	No Habitat Present. Cliffs or banks with fine-textured/sandy soils are not present within the Study Area

Table 1. Special-Status Species with Potential to Occur within the Study Area

<i>Scientific Name</i> (Common Name)	Federal Status ¹	State Status ¹	Habitat Requirements	Potential for Occurrence
<i>Progne subis</i> Purple martin	--	CSC	Nests in tall bridges and overpasses near water and open areas.	No Habitat Present. No tall bridges or overpasses are present within the Study Area. Suitable nesting habitat is located in the Silver Eagle Road overpass just northwest of the Study Area. The Study Area does not provide high quality foraging habitat.
<i>Vireo bellii pusillus</i> Bell's least vireo	FE	FE	Strongly associated with riparian corridors. Generally restricted to southern California along lowland willow-dominated riparian areas. In the Sacramento Valley, the species occurs as a vagrant during the breeding season.	No Habitat Present. The Study Area does not contain suitably willow-dominated riparian habitat.
Mammals				
<i>Lasiurus cinereus</i> Hoary bat	--	WBWG M	Roosts primarily in foliage of both coniferous and deciduous trees at the edges of clearings (WBWG 2024).	Moderate. Trees scattered throughout the Study Area are suitable roosting habitat for this species.

¹*Status Codes:*

CC - CDFW Candidate for Listing CE - CDFW Endangered CFP - CDFW Fully Protected CRPR - California Rare Plant Rank CR - California Rare
 CSC - CDFW Species of Concern CT - CDFW Threatened FE - Federally Endangered FT - Federally Threatened FC - Federal Candidate for Listing
 WBWG H - Western Bat Working Group High Threat Rank WBWG M - Western Bat Working Group Medium Threat Rank

Figure 2 and 3 shows CNDDDB occurrences within five miles of the Study Area. Below is a discussion of all special-status plant and animal species with potential to occur on the site.

The Study Area lacks suitable habitat to support special-status invertebrates reptiles and amphibians. The seasonal wetland swale represents low quality suitable habitat for special status plant species. Due to the mobility of the species and proximity to Steelhead Creek, the Study Area may intermittently support special-status and common nesting birds and hoary bat.

5.1 Plants

5.1.1 Dwarf downingia

Dwarf downingia (*Downingia pusilla*) is not federally or state listed, but it is classified as a CRPR List 2B.2 plant. It is a diminutive annual herb that is strongly associated with vernal pools and mesic valley and foothill grassland, and is found in elevations ranging from five to 1460 feet (CNPS 2023). Dwarf downingia is typically associated with areas that experience a moderate degree of disturbance, and it blooms from March to May (CNPS 2023).

The closest known occurrence of dwarf downing is CNDDDB occ. 1677 almost 5-miles north of the Study Area. While highly disturbed and not within annual grassland habitat, the seasonal wetland swale cannot be excluded as potential dwarf downingia habitat without further surveys.

5.1.2 Ahart's dwarf rush

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is not state or federally listed, but it is classified as a CRPR List 1B.2 plant. This annual herb grows along the edges of vernal pools and swales within mesic valley and foothill grassland habitat between elevations of approximately 100 and 750 feet (CNPS 2023). Ahart's dwarf rush blooms from March to May (CNPS 2023).

The seasonal wetland swale within the Study Area represents potential habitat for this species. There are no documented Ahart's dwarf rush occurrences within 5-miles of the Study Area.

5.2 Birds

5.2.1 Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a raptor species that is not federally listed, but is listed as threatened by CDFW. Breeding pairs typically nest in tall trees associated with riparian corridors, and forage in grassland, irrigated pasture, and cropland with a high density of rodents (Shuford and Gardali 2008). The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter (Shuford and Gardali 2008).

Trees within and adjacent to the Study Area provide suitable nesting habitat. The nearest documented Swainson's hawk nest that is considered extant is CNDDDB Occurrence #2215, which is a nest in a cottonwood tree approximately 1.2 miles south of the Study Area last observed in 2010 (CNDDDB 2024).

5.2.2 White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not federally or state listed, but is a CDFW fully protected species. This species is a yearlong resident in the Central Valley and is primarily found in or near foraging areas such as open grasslands, meadows, farmlands, savannahs, and emergent wetlands (Shuford and Gardali 2008). White-tailed kites typically nest from March through June in trees within riparian, oak woodland, and savannah habitats of the Central Valley and Coast Range (Shuford and Gardali 2008).

Trees within and adjacent to the Study Area provide suitable nesting habitat. The nearest documented occurrence of white-tailed kite in the CNDDDB is Occurrence #142, which is located approximately 1.7 miles south of the Study Area along the American River Parkway (CNDDDB 2024).

5.2.3 Burrowing Owl

Burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or Federal Endangered Species Acts; however, it is designated as a species of special concern by the CDFW. This species typically inhabits dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. It typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*), but may also use man-made structures such as culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (CDFW 1995). The breeding season extends from February 1 through August 31 (CBOC 1993, CDFW 2012).

Ruderal habitats may be utilized by burrowing owl, however, the Study Area is heavily impacted by transient human activity and no suitable burrow habitat was observed. The closest known occurrence is approximately 0.8 miles northwest of the Study Area (CNDDDB Occ. 841).

5.3 Mammals

5.3.1 Hoary Bat

The hoary bat (*Lasiurus cinereus*) is not federally or state listed, but is classified by the WBWG as a Medium priority species. It is considered to be one of the most widespread of all American bats with a range extending from Canada to central Chile and Argentina as well as Hawaii (WBWG 2017). Hoary bats are solitary and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches at the edge of a clearing (WBWG 2017). This species may also occasionally roost in caves, beneath a rock ledge, in a woodpecker hole, in a grey squirrel nest, under a wood plank, or clinging to the side of a building (WBWG 2017).

Trees within the oak woodland represent suitable roosting habitat for hoary bat. The closest documented occurrence is CNDDDB occ 139 approximately 3.5 miles southwest of the Study Area observed in West Sacramento in 1991 (CNDDDB 2024).

5.4 Protected Trees

A number of native oaks are large enough to qualify as protected by the City of Sacramento and Project implementation would result in the destruction of these trees. The Study Area supports 23 trees as detailed in the Arborist Report (Madrone 2024). Of these, 13 met the Tree Ordinance size threshold and are considered Protected Trees under the Tree Ordinance. These include two Valley oak (*Quercus lobata*) trees and 11 blue oak (*Quercus douglasii*) trees. The cumulative DSH of the 13 Protected Trees documented within the Study Area is 281.6 inches and is shown in Table 2 below along with tree health.

Table 2. Protected Trees within the Study Area

Species	Number of Trees (DSH)	Trees in Poor Condition (DSH)	Trees in Fair Condition (DSH)	Trees in Good Condition (DSH)
Valley oak (<i>Quercus lobata</i>)	2 (52.3)	0 (0)	2 (52.3)	0 (0)
Blue oak (<i>Quercus douglasii</i>)	11 (229.3)	3 (46.1)	6 (137.9)	2 (45.3)
Total	13 (281.6)	3 (46.1)	8 (190.2)	2 (45.3)

6.0 IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

This section details potential impacts to the biological resources discussed above associated with construction of the Project (Project Area), as discussed in Section 1.1 and shown in Attachment A.

6.1 Plant Species

The seasonal wetland swale may support dwarf downingia and Ahart’s dwarf rush and grading and development of the Project Area would impact these plant species if present.

6.2 Aquatic Resources

The Project Area contains 0.11 acres/399 linear feet of remnant seasonal wetland swale which will be completely filled by construction. This swale lacks connectivity to off-site waterways and is highly degraded, it is considered a water of the State under Porter Cologne.

6.3 Nesting Raptors and Songbirds

Swainson’s hawk, white-tailed kite, and burrowing owl have potential to nest within or adjacent to the Project Area, as do other more common bird species protected by the MBTA. If nesting on-site, removal of the nests would impact these species. Furthermore, birds nesting in avoided areas adjacent to construction could be disturbed by construction, which could result in nest abandonment.

6.4 Foraging Raptors

The ruderal areas within the Project Area provide low quality foraging habitat for Swainson's hawk and white-tailed kite, lacking ground squirrel burrows or sufficient cover to support dense rodent populations. Approximately 6.5 acres of ruderal land will be impacted during Project implementation and is not a significant reduction in foraging habitat.

6.5 Hoary Bat

Trees throughout the Project Area are potential habitat for hoary bat and other common bats species. If special-status bats were roosting in trees to be removed by Project construction they could be injured or killed during the removal.

6.6 Protected Trees

The Project will require the removal of 13 Protected Trees with a cumulative DSH of 281.6 inches.

7.0 MITIGATION FOR IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

The following are mitigation measures that are often required by CEQA lead agencies for impacts to sensitive biological resources that may be associated with construction of the Project.

7.1 Plants

The seasonal wetland swale has the potential to support special-status dwarf downingia and Ahart's dwarf rush. Special-status plant surveys shall be conducted prior to commencement of construction. Surveys shall be conducted in accordance with agency-accepted protocols at the time of the survey. Currently (2024), these are: *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000), the *Botanical Survey Guidelines of the California Native Plant Society* (CNPS 2001), and *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). These protocols include conducting surveys at the appropriate time of year, when plants are in bloom.

If no special-status plant species are found, no further mitigation would be required. If special status plants are found within proposed impact areas, then mitigation shall be required. Mitigation may consist of collecting seed-bearing soil and spreading it into a suitable constructed wetland at a mitigation site. If special-status plants will be impacted, a qualified biologist shall prepare an avoidance and mitigation plan detailing protection and avoidance measures, transplantation procedures, success criteria, and long-term monitoring protocols. This plan shall be approved by the City, and shall ensure that mitigation for the impacts to rare plants will result in no net loss of individual plants after a five year monitoring period. In

addition, a pre-construction worker awareness training shall be conducted to alert workers to the presence of and protections for special-status plants.

7.2 Aquatic Resources

- If the USACE determines that the seasonal wetland swale within the Project Area is jurisdictional under Section 404 of the Clean Water Act, the Project Applicant shall apply for a Department of the Army permit for impacts to waters of the U.S. (waters). Waters that will be impacted shall be replaced or rehabilitated on a “no-net-loss” basis. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods acceptable to the USACE.
- The Applicant shall apply for a Section 401 water quality certification from the RWQCB, and adhere to the certification conditions; however, if the USACE does not assert jurisdiction over the seasonal wetland swale, the Project Applicant will prepare a Report of Waste Discharge Requirement, as aquatic resources present would be considered Waters of the State, and the Project Applicant shall mitigate to ensure there is no net loss of wetlands as a result of the Project.

7.3 Water Quality

The project will minimize impacts to water quality through the implementation of appropriate BMPs during construction, which may include the following:

- All exposed soils and other fills will be permanently stabilized at the earliest practicable date with the use of hydroseeding and/or other means of revegetation or erosion control.
- Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) will be employed for disturbed areas. No disturbed surfaces will be left without erosion control measures in place during the winter and spring months.
- A spill prevention and countermeasure plan shall be developed which would identify proper storage, collection and disposal measures for potential pollutants used onsite. The plan will also require the proper storage, handling, use, and disposal of petroleum products.
- Construction activities shall be scheduled to minimize land disturbance during peak runoff periods and to the immediate area required for construction. Soil conservation practices shall be completed during the fall or winter to reduce erosion during spring runoff. Existing vegetation will be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.
- Surface water runoff shall be controlled by directing flowing water away from critical areas and by reducing runoff velocity. Diversion structures such as terraces, dikes, and ditches shall collect and direct runoff water around vulnerable areas to protect drainage outlets. Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.
- Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out.

The applicant will store, cover, and isolate construction materials, including topsoil and chemicals, to prevent runoff losses and contamination of groundwater.

- Topsoil removed during construction shall be carefully stored. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events.
- Fuel and vehicle maintenance areas will be established away from all drainage courses and will be designed to control runoff.
- Disturbed areas shall be revegetated after completion of construction activities.

7.4 Nesting Raptors and Other Birds

The following nest survey requirements apply if construction activities take place during the typical bird breeding/nesting season (typically February 15 through September 1).

7.4.1 Swainson's Hawk

A targeted Swainson's hawk nest survey shall be conducted throughout all accessible areas within ¼ mile of the proposed construction area no later than 14 days prior to construction activities. If active Swainson's hawk nests are found within ¼ mile of a construction area, construction shall cease within ¼ mile of the nest until a qualified biologist (Project Biologist) determines that the young have fledged or it is determined that the nesting attempt has failed. If the applicant desires to work within ¼ mile of the nest, the applicant shall consult with CDFW and the City to determine if the nest buffer can be reduced. The Project applicant, the Project biologist, the City and CDFW shall collectively determine the nest avoidance buffer, and what (if any) nest monitoring is necessary. If an active Swainson's hawk nest is found within the Project site prior to construction and is in a tree that is proposed for removal, then the Project applicant shall implement additional mitigation recommended by a qualified biologist based on CDFW guidelines and obtain any required permits from CDFW.

7.4.2 Burrowing Owl

A targeted burrowing owl nest survey shall be conducted of all accessible areas within 500 feet of the proposed construction area within 15 days prior to construction activities utilizing 60 foot transects as outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) (Staff Report). If an active burrowing owl nest burrow (i.e., occupied by more than one adult owl, and/or juvenile owls are observed) is found within 250 feet of a construction area, construction shall cease within 250 feet of the nest burrow until the Project Biologist determines that the young have fledged or it is determined that the nesting attempt has failed. If the applicant desires to work within 250 feet of the nest burrow, the applicant shall consult with CDFW and the City to determine if the nest buffer can be reduced.

If construction begins during the non-nesting season, (September 1 through the 14 February), the applicant shall conduct a survey for burrows or debris that represent suitable nesting habitat for burrowing owls within areas of proposed ground disturbance. If overwintering owls are located and cannot be avoided, the applicant may exclude any burrowing owls observed and collapse any burrows or remove the debris in

accordance with the methodology outlined in the Staff Report. In accordance with the Staff Report, prior to burrow exclusion and/or closure, a Burrowing Owl Exclusion Plan must be developed and approved by CDFW. As outlined in the Staff Report, components of this plan shall include but not be limited to:

- Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
- Type of scope and appropriate timing of scoping to avoid impacts;
- Occupancy factors to look for and what will guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape i.e., look for sign immediately inside the door).
- How the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
- Removal of other potential owl burrow surrogates or refugia on site;
- Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;
- Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take; and
- How the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.

If any nesting burrowing owls are found during the breeding season pre-construction survey mitigation for the permanent loss of burrowing owl foraging habitat (defined as all areas of suitable habitat within 250 feet of an active nest burrow) shall be accomplished at a 1:1 ratio. The mitigation provided shall be consistent with recommendations in the CDFW 2012 Staff Report or if the Project Biologist and the City determine that the area is suitable. The Staff Report recommendations for mitigation land for burrowing owls are as follows:

- Where habitat will be temporarily disturbed, restore the disturbed area to pre-project condition including decompacting soil and revegetating. Permanent habitat protection may be warranted if there is the potential that the temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable depending on the time frame, resulting in reduced survival or abandonment. For the latter potential impact, see the permanent impact measures below.
- Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the information provided in Appendix A. Note: A minimum habitat replacement recommendation is not provided here as it has been shown to serve as a default, replacing any site-specific analysis and discounting the wide variation in natal area, home range, foraging area, and

other factors influencing burrowing owls and burrowing owl population persistence in a particular area.

- Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals. The mitigation lands may require habitat enhancements including enhancement or expansion of burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. If the mitigation lands are located adjacent to the impacted burrow site, ensure the nearest neighbor artificial or natural burrow clusters are at least within 210 meters.
- Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission, for the purpose of conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is located within the service area of a Department approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.
- Develop and implement a mitigation land management plan to address long-term ecological sustainability and maintenance of the site for burrowing owls (see Management Plan and Artificial Burrow sections below, if applicable).
- Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
- Habitat should not be altered or destroyed, and burrowing owls should not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to Department-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
- Mitigation lands should be on, adjacent or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present. Where there is insufficient habitat on, adjacent to, or near project sites where burrowing owls will be excluded, acquire mitigation lands with burrowing owl habitat away from the project site. The selection of mitigation lands should then focus on consolidating and enlarging conservation areas located outside of urban and planned growth areas, within foraging distance of other conserved lands. If mitigation lands are not available adjacent to other conserved lands, increase the mitigation land acreage requirement to ensure a selected site is of sufficient size. Offsite mitigation may not adequately offset the biological and habitat values impacted on a one to one basis. Consult with the Department when determining offsite mitigation acreages.
- Evaluate and select suitable mitigation lands based on a comparison of the habitat attributes of the impacted and conserved lands, including but not limited to: type and structure of habitat being impacted or conserved; density of burrowing owls in impacted and conserved habitat; and significance of impacted or conserved habitat to the species range-wide. Mitigate for the highest quality burrowing owl habitat impacted first and foremost when identifying mitigation lands, even

if a mitigation site is located outside of a lead agency's jurisdictional boundary, particularly if the lead agency is a city or special district.

- Select mitigation lands taking into account the potential human and wildlife conflicts or incompatibility, including but not limited to, human foot and vehicle traffic, and predation by cats, loose dogs and urban-adapted wildlife, and incompatible species management (i.e., snowy plover).
- Where a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may enhance sustainability of the burrowing owl population onsite. Maintenance includes keeping lands grazed or mowed with weed eaters or push mowers, free from trees and shrubs, and preventing excessive human and human-related disturbance (e.g., walking, jogging, off-road activity, dog-walking) and loose and feral pets (chasing and, presumably, preying upon owls) that make the environment uninhabitable for burrowing owls. Items 4, 5 and 6 also still apply to this mitigation approach.
- If there are no other feasible mitigation options available and a lead agency is willing to establish and oversee a Burrowing Owl Mitigation and Conservation Fund that funds on a competitive basis acquisition and permanent habitat conservation, the project proponent may participate in the lead agency's program.

7.4.3 Other Birds

A pre-construction nesting bird survey shall be conducted by a qualified biologist within the Project Area and within a 500-foot radius of proposed construction areas, where access is available, no more than three (3) days prior to the initiation of construction. If there is a break in construction activity of more than two (2) weeks then subsequent surveys shall be conducted.

If active raptor nests, not including Swainson's hawk or white-tailed kite, are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. If active songbird nests are found, a 100-foot no disturbance buffer will be established. These no-disturbance buffers may be reduced if a smaller buffer is proposed by the Project Biologist and approved by the City after taking into consideration the natural history of the species of bird nesting, the proposed activity level adjacent to the nest, habituation to existing or ongoing activity, and nest concealment (are there visual or acoustic barriers between the proposed activity and the nest). A qualified biologist can visit the nest as needed to determine when the young have fledged the nest and are independent of the site or the nest can be left undisturbed until the end of the nesting season.

7.4.4 Survey Report

A report summarizing the survey(s), including those for Swainson's hawk, shall be provided to the City within 30 days of the completed survey and is valid for one construction season. If no nests are found, no further mitigation is required.

7.5 Roosting Bats

A qualified biologist shall conduct a bat habitat assessment of all potential roosting trees within the proposed impact footprint. This habitat assessment shall identify all potentially suitable roosting habitat and may be conducted up to one year prior to the start of construction. If no roosting habitat is found, no additional mitigation is necessary.

If potential roosting habitat is identified (cavities in trees) within the areas proposed for impact, the biologist shall survey the potential roosting habitat during the active season (generally April through October or from January through March on days with temperatures in excess of 50 degrees F) to determine presence of roosting bats. These surveys are recommended to be conducted utilizing methods that are considered acceptable by CDFW and bat experts. Methods may include evening emergence surveys, acoustic surveys, inspecting potential roosting habitat with fiberoptic cameras or a combination thereof.

If roosting bats are identified within any of the trees proposed for removal, or if presence is assumed, the trees shall be removed outside of pup season only on days with temperatures in excess of 50 degrees F. Pup season is generally during the months of May through August. Two-step tree removal shall be utilized under the supervision of a qualified biologist. Two-step tree removal involves removal of all branches of the tree that do not provide roosting habitat on the first day, and then the next day cutting down the remaining portion of the tree. Additionally, it is recommended that all other tree removal and/or structure demolition be conducted from January through March on days with temperatures in excess of 50 degrees F to avoid potential impacts to foliage-roosting bat species.

7.6 Protected Trees

The Tree Ordinance requires the Project Applicant to obtain a Tree Permit from the City prior to Improvement Plan approval if Protected Trees will be impacted by the Project. The Tree Permit Application will be accompanied by a Tree Replacement Plan, which "must provide for the replacement of trees at a ratio of one inch DSH of tree replaced for each inch DSH of tree removed (1:1 ratio)." Replacement options include on-site or off-site replacement, payment of an in-lieu fee, or credit for existing trees that will be preserved. Tree replacement equivalents outlined in the Tree Ordinance are summarized in **Table 3** below, and the current in-lieu fee is \$325 per DSH inch. The City shall review the permit application as well as the final site improvement plans and determine the precise mitigation requirement at that time.

Table 3. Tree Replacement Equivalency

Replacement Tree Size	DSH Equivalency
15-gallon container or smaller tree	1-inch DSH
24-inch box tree	2-inch DSH
36-inch box tree	3-inch DSH

8.0 REFERENCES

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Figures

Figure 1. Site and Vicinity

Figure 2. Project Components

Figure 3. California Natural Diversity Database Occurrences and Critical Habitat

Figure 4. Vegetation Communities

Figure 5. Aquatic Resources and Elderberry Shrub Location Map

Figure 6. NRCS Soils Map

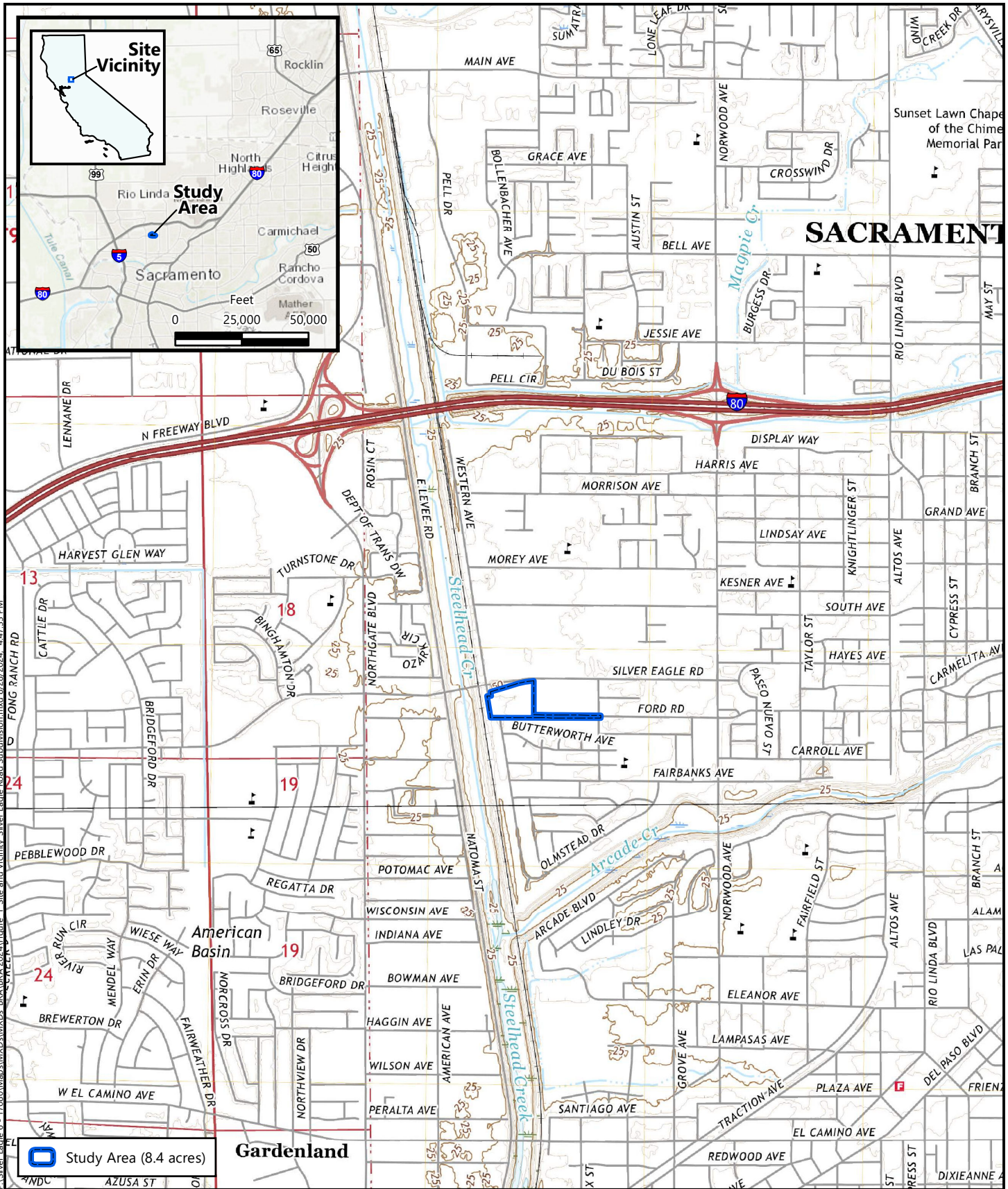
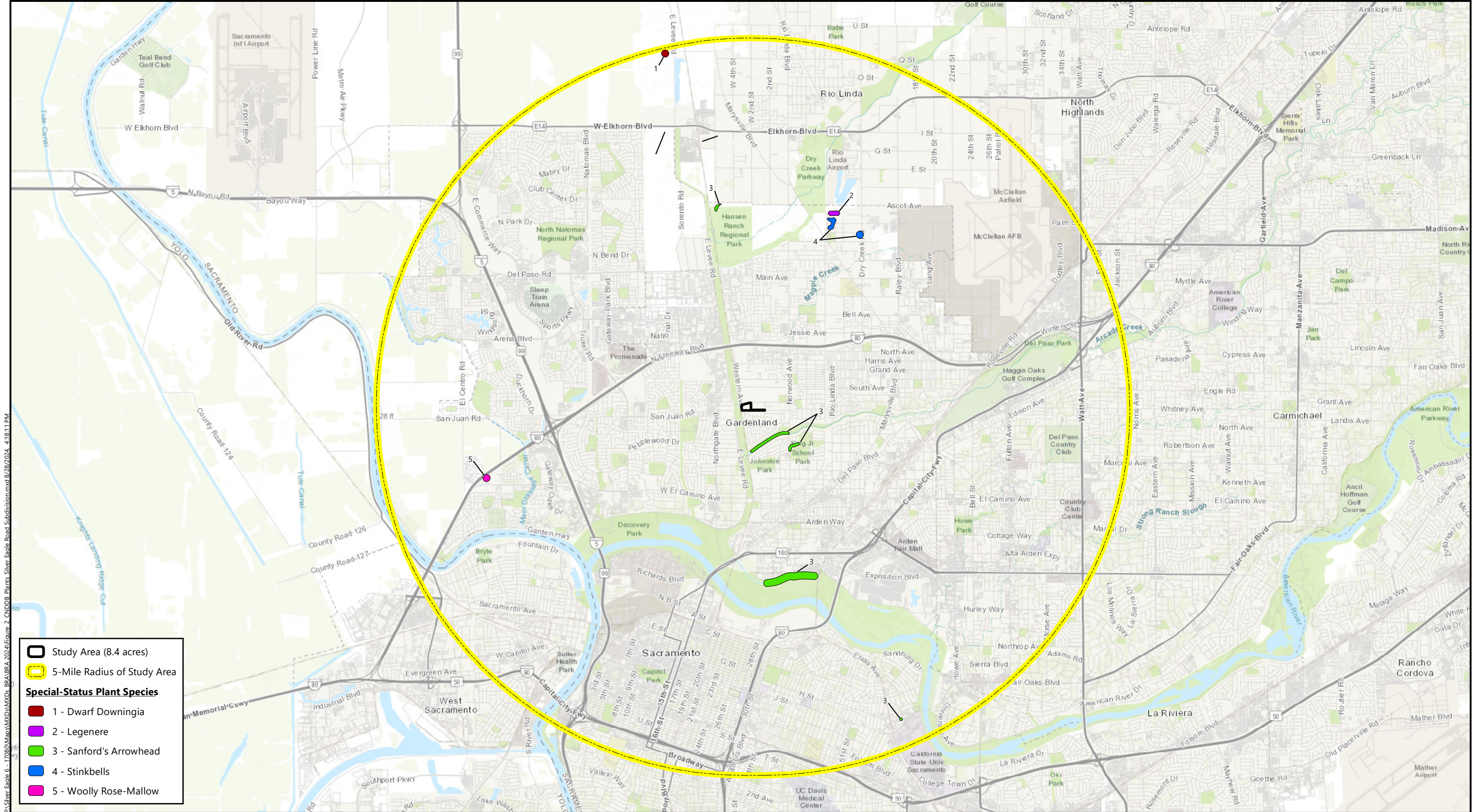


Figure 1
Site and Vicinity

Source: United States Geologic Survey, 2022.
 "Rio Linda, California" 7.5-Minute Topographic Quadrangle
 Del Paso Land Grant
 Township 9 North, Range 5 East
 Latitude 38.629403, Longitude -121.467773

Silver Eagle Road Subdivision
 Sacramento, Sacramento County, California





P:\Silver Eagle 6 - 17080\Mapa\MXD\st\MXDs - BRA\BRA_2024\Figure 2 - CNDDDB - Plants Silver Eagle Road Subdivision.mxd 8/28/2024 4:18:11 PM

Study Area (8.4 acres)

5-Mile Radius of Study Area

Special-Status Plant Species

- 1 - Dwarf Downingia
- 2 - Legenere
- 3 - Sanford's Arrowhead
- 4 - Stinkbells
- 5 - Woolly Rose-Mallow

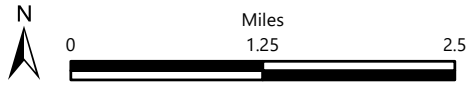
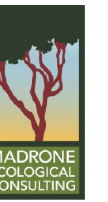
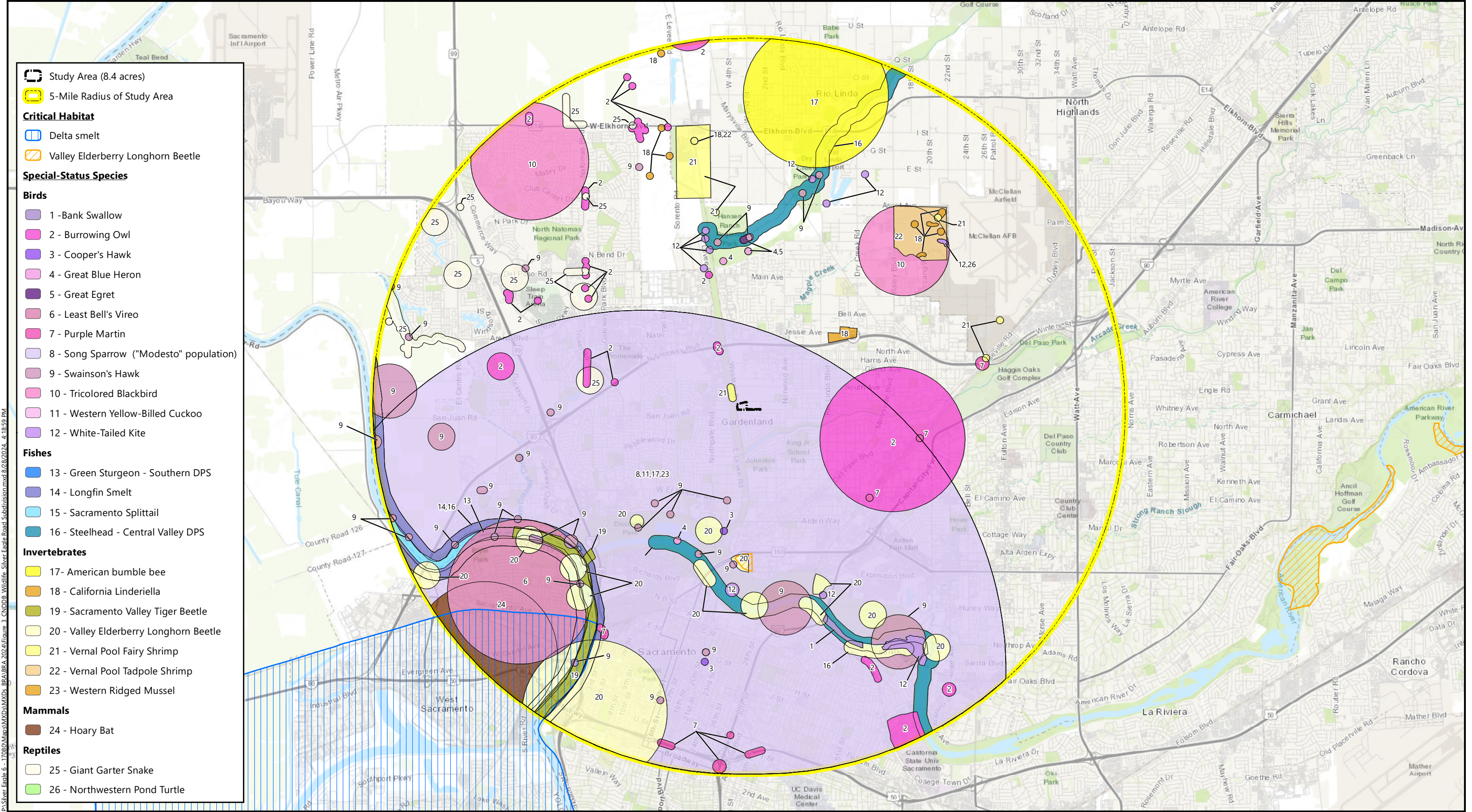


Figure 2
California Natural Diversity Database
Occurrences of Plant Species



Source: California Department of Fish and Wildlife, August 2024
 Basemap Source: National Geographic and ESRI

Silver Eagle Road Subdivision
 Sacramento, Sacramento County, California



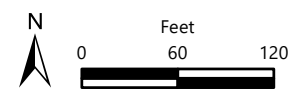
- Study Area (8.4 acres)
- 5-Mile Radius of Study Area
- Critical Habitat**
- Delta smelt
- Valley Elderberry Longhorn Beetle
- Special-Status Species**
- Birds**
- 1 - Bank Swallow
- 2 - Burrowing Owl
- 3 - Cooper's Hawk
- 4 - Great Blue Heron
- 5 - Great Egret
- 6 - Least Bell's Vireo
- 7 - Purple Martin
- 8 - Song Sparrow ("Modesto" population)
- 9 - Swainson's Hawk
- 10 - Tricolored Blackbird
- 11 - Western Yellow-Billed Cuckoo
- 12 - White-Tailed Kite
- Fishes**
- 13 - Green Sturgeon - Southern DPS
- 14 - Longfin Smelt
- 15 - Sacramento Splittail
- 16 - Steelhead - Central Valley DPS
- Invertebrates**
- 17 - American bumble bee
- 18 - California Linderiella
- 19 - Sacramento Valley Tiger Beetle
- 20 - Valley Elderberry Longhorn Beetle
- 21 - Vernal Pool Fairy Shrimp
- 22 - Vernal Pool Tadpole Shrimp
- 23 - Western Ridged Mussel
- Mammals**
- 24 - Hoary Bat
- Reptiles**
- 25 - Giant Garter Snake
- 26 - Northwestern Pond Turtle



Figure 3
California Natural Diversity Database
Occurrences of Wildlife Species
and Critical Habitats
 Silver Eagle Road Subdivision
 Sacramento, Sacramento County, California



Source: California Department of Fish and Wildlife, August 2024
 Basemap Source: National Geographic and ESRI



Aerial Source: Maxar, 12 April 2022

Figure 4
Aquatic Resources

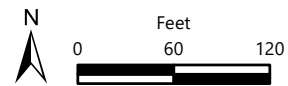
Silver Eagle Road Subdivision
Sacramento, Sacramento County, California



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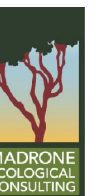
P:\Silver Eagle 6 - 17080\Maps\MXD\MapXDs - BRA\BRA_2024\Figure 5 - Vegetation Communities Silver Eagle Road Subdivision.mxd 9/28/2024 4:21:25 PM



Aerial Source: Maxar, 12 April 2022


Figure 5
Vegetation Communities

Silver Eagle Road Subdivision
Sacramento, Sacramento County, California






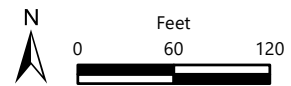
P:\Silver Eagle 6 - 17080\Maps\MXD\MXDs_BRA\BRA_2024\Figure 6 NRCS Aquatic Resources Silver Eagle Road Subdivision.mxd 9/28/2024 - 5:04:42 PM



 Study Area (8.4 acres)

Soil Map Units

-  161 - Jacktone clay, drained, 0 to 2% slopes
-  211 - San Joaquin fine sandy loam, 0 to 3% slopes
-  220 - San Joaquin-Urban land complex, 0 to 3% slopes



Soil Survey Source: *USDA, Soil Conservation Service.*
 Soil Survey Geographic (SSURGO) Database for Sacramento County, California
 Aerial Source: Maxar, 12 April 2022

Figure 6
Natural Resources Conservation
Service Soils

Silver Eagle Road Subdivision
 Sacramento, Sacramento County, California



Attachments

Attachment A. Silver Eagle Road Subdivision Illustrative Site Plan

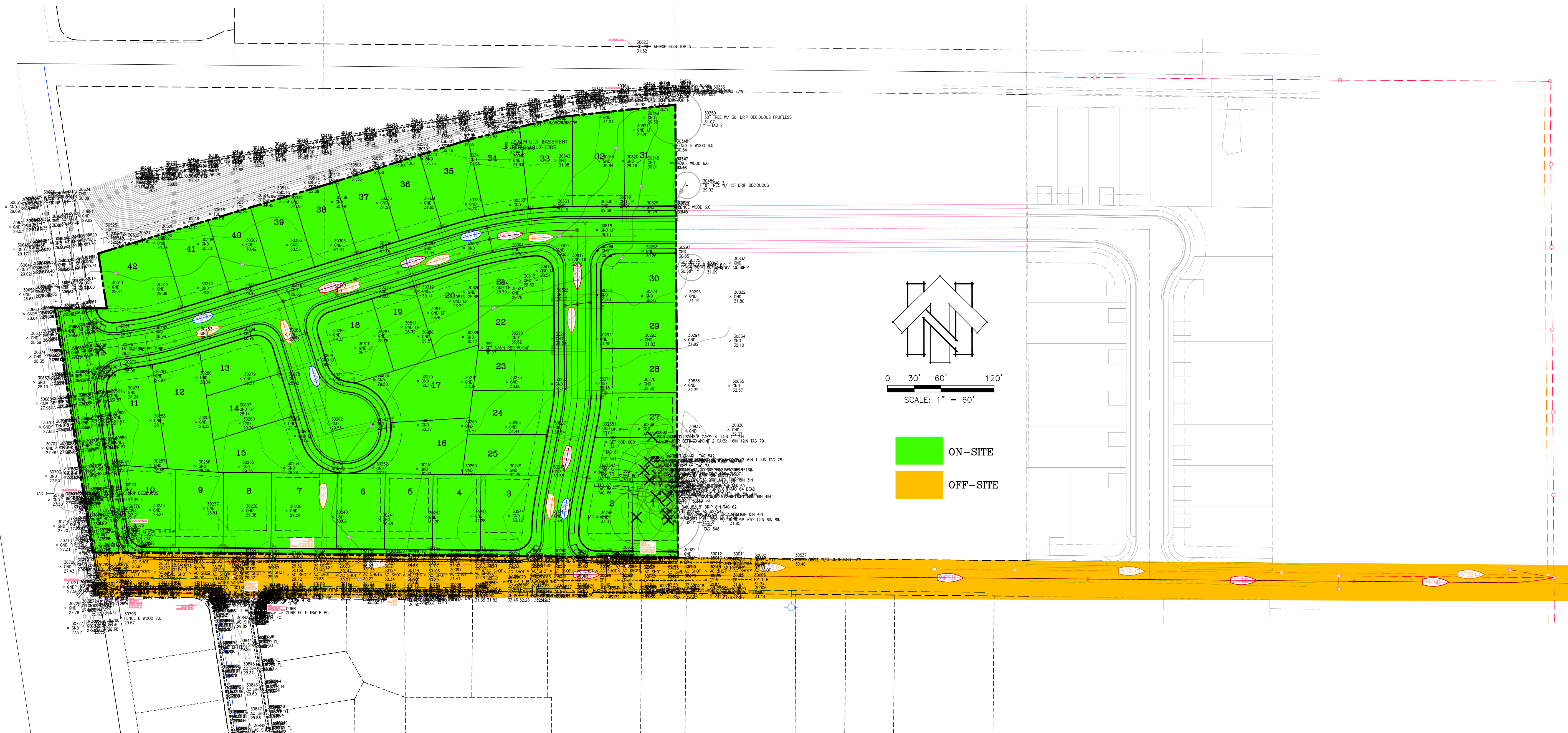
Attachment B. IPaC Trust Resource Report for the Study Area

Attachment C. CNPS Inventory of Rare and Endangered Plants Query for the "Rio Linda, California"
USGS Quadrangle and Eight Surrounding Quadrangles

Attachment D. Representative Site Photos

Attachment A

Silver Eagle Road Subdivision Illustrative Site Plan



Attachment B

IPaC Trust Resource Report for the Study Area

IPaC

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Sacramento County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Northwestern Pond Turtle <i>Actinemys marmorata</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Tiger Salamander <i>Ambystoma californiense</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot <i>Spea hammondi</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

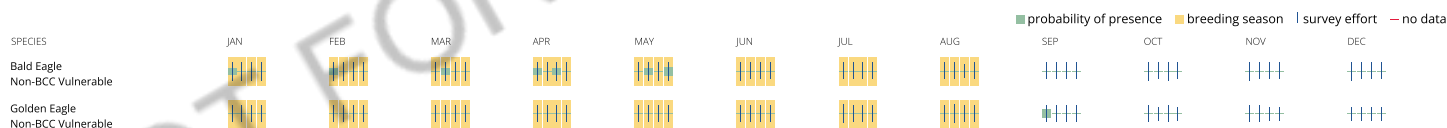
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow <i>Passerculus sandwichensis beldingi</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole <i>Icterus bullockii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull <i>Larus californicus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch <i>Spinus lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Northern Harrier <i>Circus hudsonius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15
Nuttall's Woodpecker <i>Dryobates nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Santa Barbara Song Sparrow <i>Melospiza melodia graminea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5513	Breeds Mar 1 to Sep 5
Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Western Gull <i>Larus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 21 to Aug 25
Western Screech-owl <i>Megascops kennicottii cardonensis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jun 30
Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie <i>Pica nuttalli</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (🟡)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

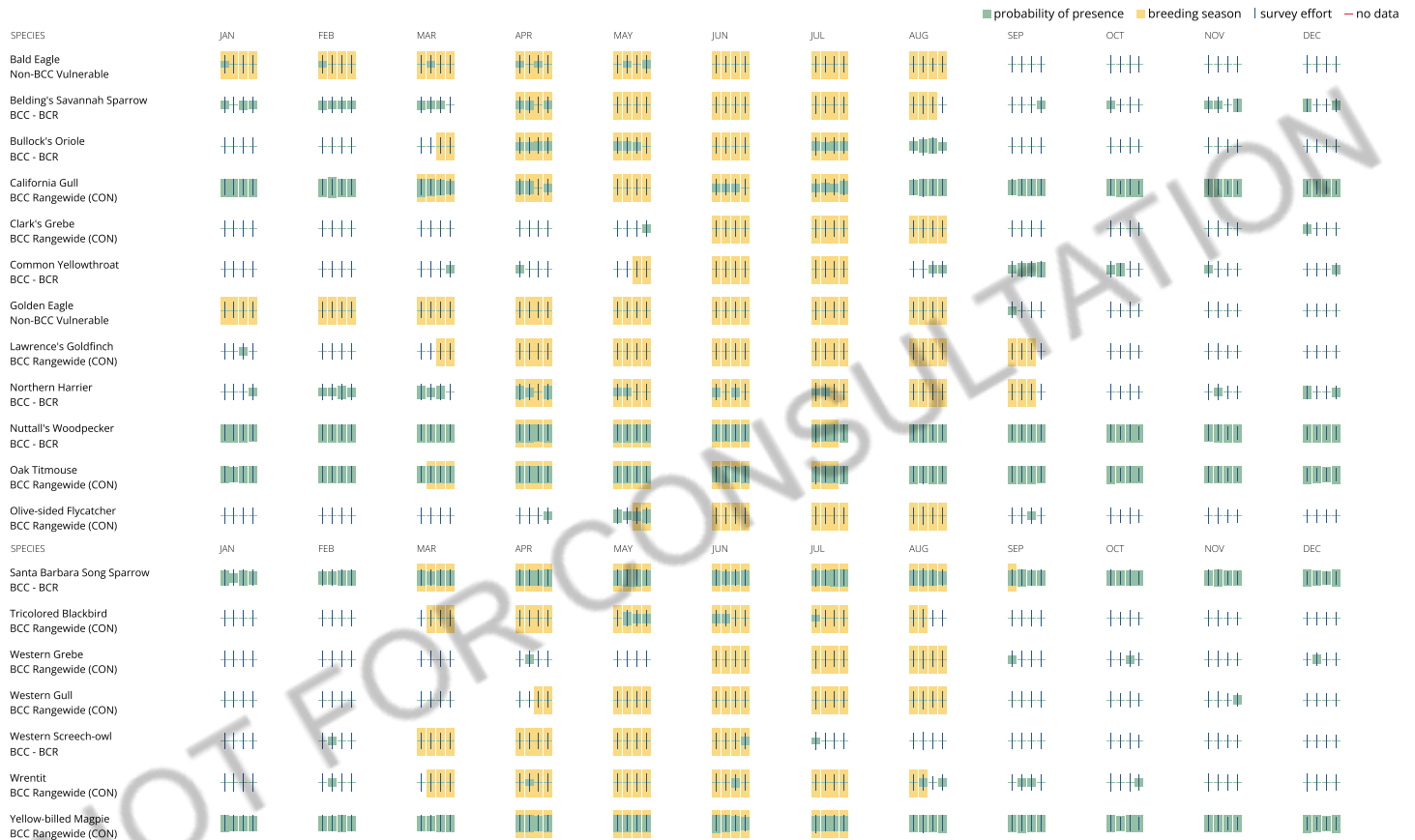
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangelwide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegle](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment C

**CNPS Inventory of Rare and Endangered Plants Query for the
"Rio Linda, California" USGS Quadrangle and Eight Surrounding Quadrangles Area**

Scientific Name	Common Name	CRPR	CESA	FESA	BloomingPeriod	Habitat	Microhabitat
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	1B.1	None	None	Apr-May	Meadows and seeps (vernally mesic), Valley and foothill grassland (subalkaline flats)	
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	1B.2	None	None	Mar-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	Serpentine (sometimes)
<i>Brodiaea rosea</i> ssp. <i>vallicola</i>	valley brodiaea	4.2	None	None	Apr-May(Jun)	Valley and foothill grassland, Vernal pools	Alluvial Terraces, Gravelly, Sandy Alkaline, Roadsides (sometimes), Seeps, Vernally
<i>Centromadia parryi</i> ssp. <i>rudis</i>	Parry's rough tarplant	4.2	None	None	May-Oct	Valley and foothill grassland, Vernal pools	Mesic
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	hispid salty bird's-beak	1B.1	None	None	Jun-Sep	Meadows and seeps, Playas, Valley and foothill grassland	Alkaline
<i>Downingia pusilla</i>	dwarf downingia	2B.2	None	None	Mar-May	Valley and foothill grassland (mesic), Vernal pools	
<i>Fritillaria agrestis</i>	stinkbells	4.2	None	None	Mar-Jun	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland	Clay, Serpentine (sometimes)
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	1B.2	CE	None	Apr-Aug	Marshes and swamps (lake margins), Vernal pools	Clay
<i>Hibiscus lasiocarpus</i> var. <i>occidentali</i>	woolly rose-mallow	1B.2	None	None	Jun-Sep	Marshes and swamps (freshwater)	
<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	1B.2	None	None	Mar-May	Valley and foothill grassland (mesic) Chaparral, Cismontane woodland, Meadows and seeps, Valley and	
<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush	1B.1	None	None	Mar-Jun	foothill grassland, Vernal pools	Vernally Mesic
<i>Legenere limosa</i>	legenere	1B.1	None	None	Apr-Jun	Vernal pools	
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	1B.1	CE	FE	Apr-Jul(Sep)	Vernal pools	
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	1B.2	None	None	May-Oct(Nov)	Marshes and swamps (shallow freshwater)	
<i>Symphotrichum lentum</i>	Suisun Marsh aster	1B.2	None	None	(Apr)May-Nov	Marshes and swamps (brackish, freshwater)	

Attachment D

Representative Site Photos



Ford Road facing west, 6 August 2024



Reminant seasonal wetland swale and ruderal uplands facing north, 6 August 2024

Date & Time: Thu Dec 7 15:28:53 PST 2017
Position: +038.628817° / -121.468803°
Altitude: 24ft
Datum: WGS-84
Azimuth/Bearing: 337° N23W 5991mils (True)
Elevation Angle: -12.2°
Horizon Angle: +03.2°
Zoom: 1X
DP-01



The corner of Western Avenue and Ford Road facing north, 7 December 2017

Date & Time: Thu Dec 7 15:51:48 PST 2017
Position: +038.629030° / -121.468813°
Altitude: 23ft
Datum: WGS-84
Azimuth/Bearing: 320° N40W 5689mils (True)
Elevation Angle: -15.8°
Horizon Angle: +02.3°
Zoom: 1X
DP-02



The corner of Western Avenue and Ford Road facing northwest, 7 December 2017

Date & Time: Thu Dec 7 16:01:05 PST 2017
Position: +038.629074° / -121.468598°
Altitude: 31ft
Datum: WGS-84
Azimuth/Bearing: 032° N32E 0569mils (True)
Elevation Angle: -05.7°
Horizon Angle: +02.7°
Zoom: 1X
DP-03



On-site seasonal wetland swale facing northeast, 7 December 2017

Date & Time: Fri Dec 8 09:50:31 PST 2017
Position: +038.630127° / -121.466772°
Altitude: 31ft
Datum: WGS-84
Azimuth/Bearing: 043° N43E 0764mils (True)
Elevation Angle: -23.3°
Horizon Angle: -00.4°
Zoom: 1X
DP-04



On-site seasonal wetland swale facing northeast, 7 December 2017

Date & Time: Fri Dec 8 09:53:32 PST 2017
Position: +038.630113° / -121.466962°
Altitude: 27ft
Datum: WGS-84
Azimuth/Bearing: 102° S78E 1813mils (True)
Elevation Angle: -14.8°
Horizon Angle: -00.7°
Zoom: 1X
DP-05



On-site seasonal wetland swale facing northeast, 8 December 2017

Date & Time: Fri Dec 8 10:41:47 PST 2017
Position: +038.629480° / -121.467726°
Altitude: 15ft
Datum: WGS-84
Azimuth/Bearing: 241° S61W 4284mils (True)
Elevation Angle: -14.5°
Horizon Angle: +02.1°
Zoom: 1X
DP-06



Center of Study Area facing west, 8 December 2017