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Document Title:	Section 5-12_Biological Resources_VDPC
Description:	This section describes biological resources in and near the Project, and the potential impacts that the Project may have on these resources. This section includes information from the Biological Resources Technical Study (BRTS) prepared for the Project by Rincon Consultants, Inc (Appendix Y).
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5.12 Biological Resources

This section describes biological resources in and near the Vaca Dixon Power Center Project (Project), and the potential effects that the Project may have on these resources. This section is supported by information from the Biological Resources Technical Study (BRTS) prepared for the Project by Rincon Consultants, Inc (Rincon 2025; Appendix Y). Section 5.12.1 discusses the environmental setting. Section 5.12.2 provides a brief regulatory overview of applicable federal, state, and local policies and regulations to the Project. Section 5.12.3 identifies potential impacts, including cumulative impacts, to biological resources. Section 5.12.4 provides recommended mitigation measures based on the results of the impacts analysis. Section 5.12.5 presents laws, ordinances, regulations and standards (LORS) applicable to biological resources. Section 5.12.6 presents the regulatory agency contacts and Section 5.12.7 describes permits that may be required for the Project related to biological resources.

5.12.1 Environmental Setting

This section provides an overview of existing conditions as further detailed in the BRTS (Appendix Y). The BRTS includes a full discussion of the methodologies used for evaluating biological resources, including details on the literature review and field surveys. The Biological Study Area (BSA) is defined for the Project as the Project Site encompassing all Project components and a 250-foot survey buffer. The BSA is shown on Figure 5.12-1.

As detailed in the BRTS, the following resources were reviewed for information on existing conditions relating to biological resources:

- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA NRCS 2019)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2025a)
- CDFW Biogeographic Information and Observation System (CDFW 2025b)
- United States Fish and Wildlife Service (USFWS) Critical Habitat Mapper (USFWS 2025a)
- USFWS National Wetlands Inventory (NWI) (USFWS 2025b)
- USFWS Information for Planning and Consultation (iPac) USFWS 2025c)
- USGS National Hydrography Dataset (NHD) (USGS 2025)
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2025a)
- eBird: An online database of bird distribution and abundance (eBird 2025)
- iNaturalist: An online database of plant and animal species occurrences (iNaturalist 2025)
- Jepson eFlora: An online database of native and naturalized vascular plants of California (Jepson eFlora 2025)

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Figure 5.12-1 Biological Study Area

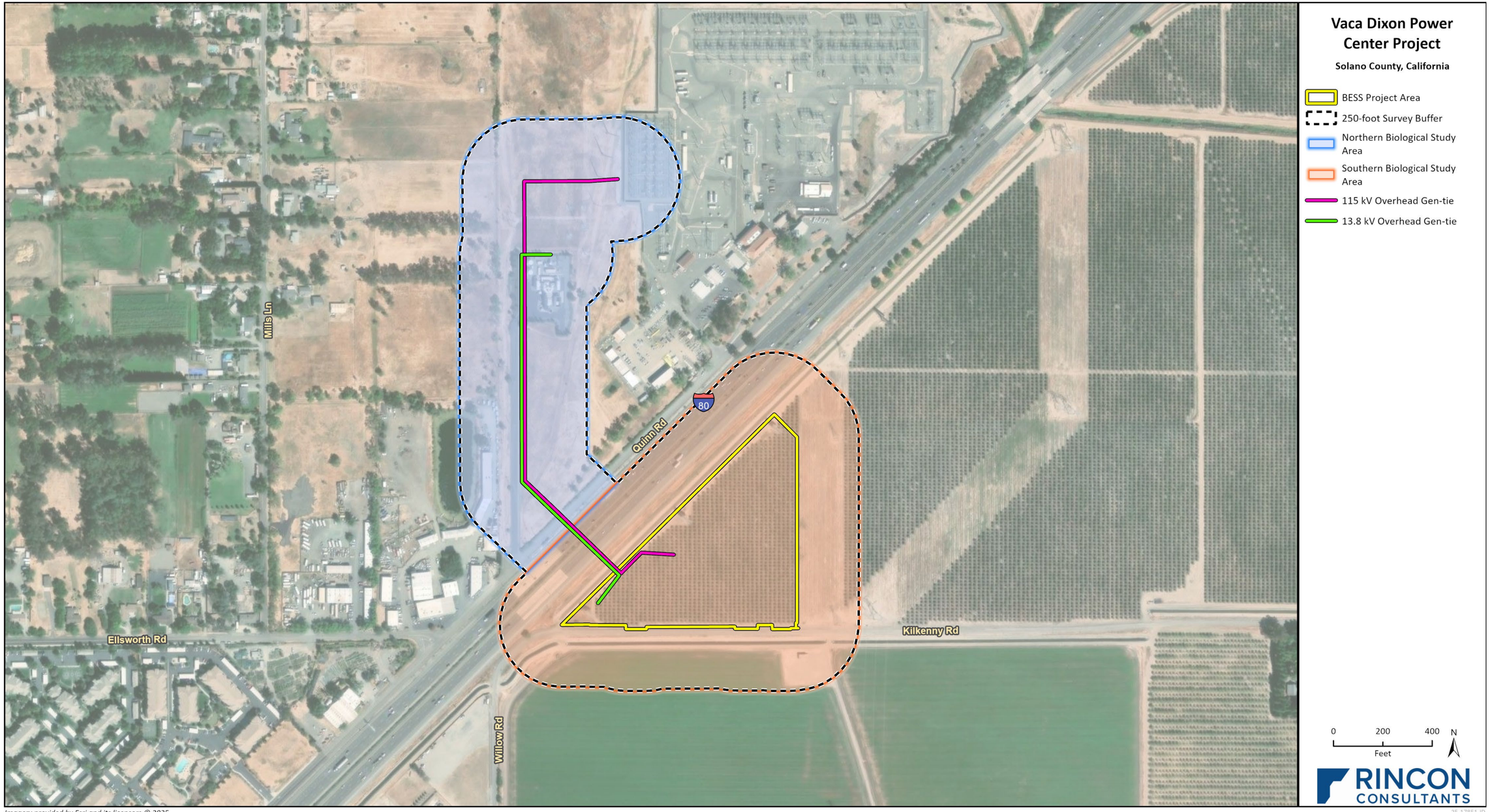

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Fig X Project Site - BSA

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5.12.1.1 Existing Conditions

Topography and Geography

The BSA includes areas both in unincorporated Solano County and within the City of Vacaville. The areas surrounding the BSA are mostly comprised of open space and agricultural land, but also include commercial, industrial, and residential areas (Solano County 2008). The BSA is comprised of a mostly flat landscape, with minor elevation changes throughout. Elevations range from approximately 79 to 84 feet above mean sea level. The Vaca Mountains lie to the west of the BSA. The northern BSA has been previously disturbed during development of the existing infrastructure but has largely been left undisturbed for over 20 years, with the exception of routine mowing. The vegetation throughout the northern BSA is periodically mowed for fuel reduction/fire clearance around the surrounding energy infrastructure. The southern BSA is active agriculture that is routinely maintained. Land uses within the vicinity of the BSA include energy infrastructure, open space, agricultural, and rural residential.

According to the National Oceanic Atmospheric Administration's (NOAA) National Weather Service (NWS), average annual temperatures in the Vacaville area between 1991 and 2024 ranged from 60.1- to 65.7-degrees Fahrenheit, typically varying between 39 (in December and January) and 92 degrees Fahrenheit (in July and August), with temperatures rarely reaching below 30 degrees Fahrenheit or above 101 degrees Fahrenheit (NOAA NWS 2025, Cedar Lake Ventures, Inc. 2025). Vacaville receives an average rainfall of approximately 24 inches, with the most rain occurring between December and January (NOAA NWS 2025).

Hydrology

The BSA is located entirely in the Ulatis Creek Watershed (Hydrologic Unit Code [HUC]-10 1802016305). The northern BSA occurs in the Gibson Canyon Creek-Sweany Creek Subwatershed (HUC-12 180201630502) and the southern BSA occurs within the Upper Ulatis Creek Subwatershed (HUC-12 180201630503). Gibson Canyon Creek occurs to the north of the BSA and flows from north to south until it meets with Sweany Creek and eventually to the Sacramento River. Refer to Figure 5.12-2a and Figure 5.12-2b for illustrations of the watersheds and mapped hydrological units of the region and BSA.

According to the USGS's NHD (2005) and USFWS's NWI, three hydrological features are mapped within the BSA. Two features occur within the southern portion of the BSA and can be described as well-developed agricultural ditches occurring to the north and south of the plum orchard. The NWI describes these features as man-made perennial riverine features. The southern ditch is identified herein as Agricultural Ditch 1 and the northern ditch is identified herein as Agricultural Ditch 2. Water within Agricultural Ditch 1 drains from west to east where flows eventually meet with Gibson Canyon Creek, to the east of the BSA. The third feature occurs in the northern portion of the BSA and is a man-made pond described by the NWI as permanently flooded with some riparian vegetation. This pond is potentially used for agricultural or stormwater purposes.

Drainage ditches and culverts that were not documented in the NWI or NHD were mapped during the 2024 and 2025 delineation surveys. The mapping presented in the NHD and NWI provides useful context but is not a completely accurate depiction of current conditions or extent of aquatic features in the BSA. Refer to Section 5.12.1.3 *Sensitive Biological Resources: Jurisdictional Waters and Wetlands* for details on aquatic features mapped within the BSA.

Soils

According to the USDA NRCS Web Soil Survey data for Solano County, California (USDA NRCS 2019), three soil map units occur within the BSA. Parent rock material for the Project Site can be described as older quaternary alluvium and marine deposits, dating back to the Pleistocene era (USGS 2005). Figure 12-3 depicts the location of the soil series throughout the BSA. The BSA contains Clear Lake clay, 0 to 2 percent slopes, MLRA 17, San Ysidro sandy loam, 0 to 2 percent slopes, and San Ysidro sandy loam, thick surfaces, 0 to 2 percent slopes (Figure 5.12-3). Of the three soil map units, the Clear Lake clay, 0 to 2 percent slopes, MRLA 17 soil is considered hydric.

Figure 5.12-2a Wetland Hydrology near the Biological Study Area and Surrounding Area (Figure 1 of 2)

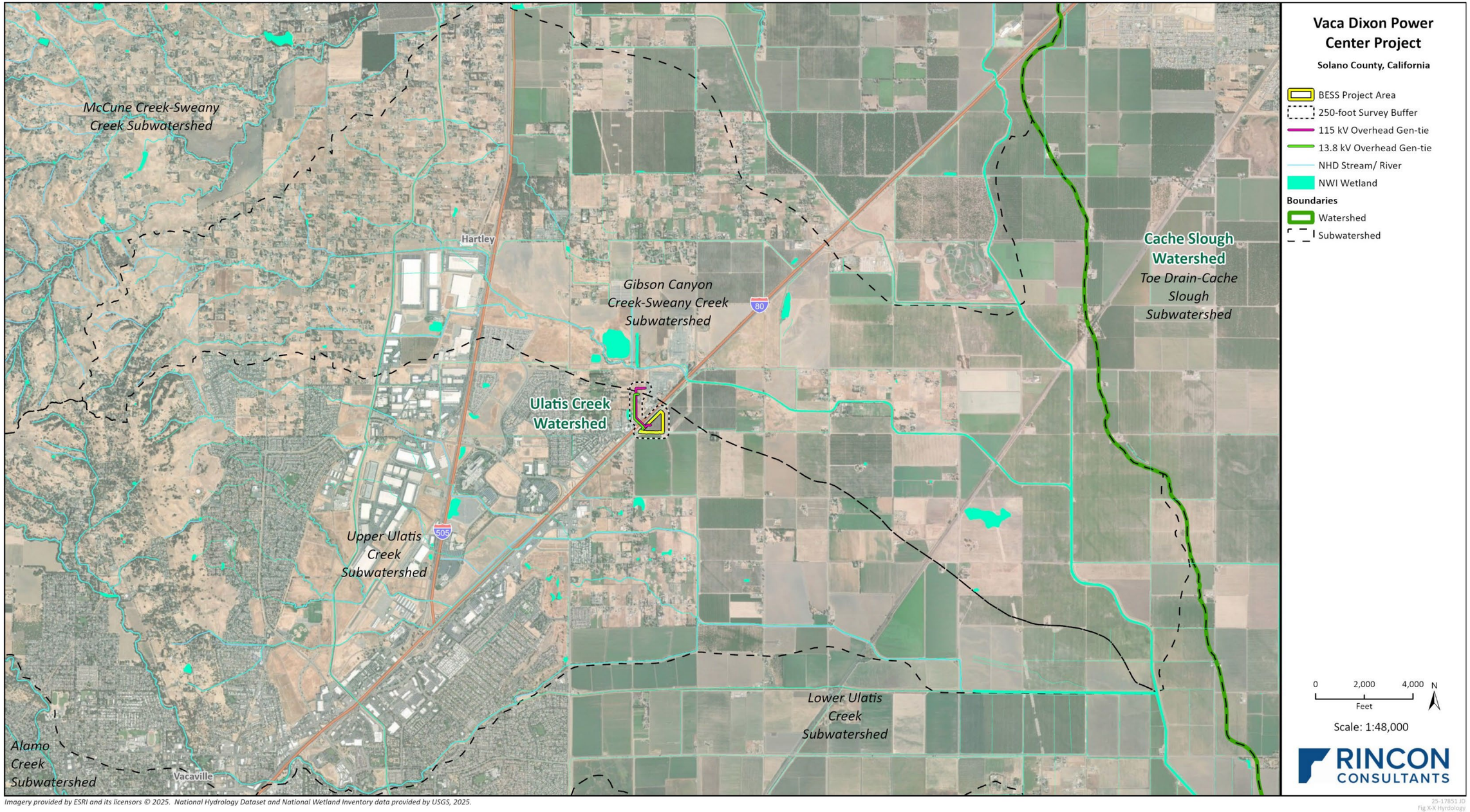

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Figure 5.12-2b Wetland Hydrology of the Biological Study Area (Figure 2 of 2)

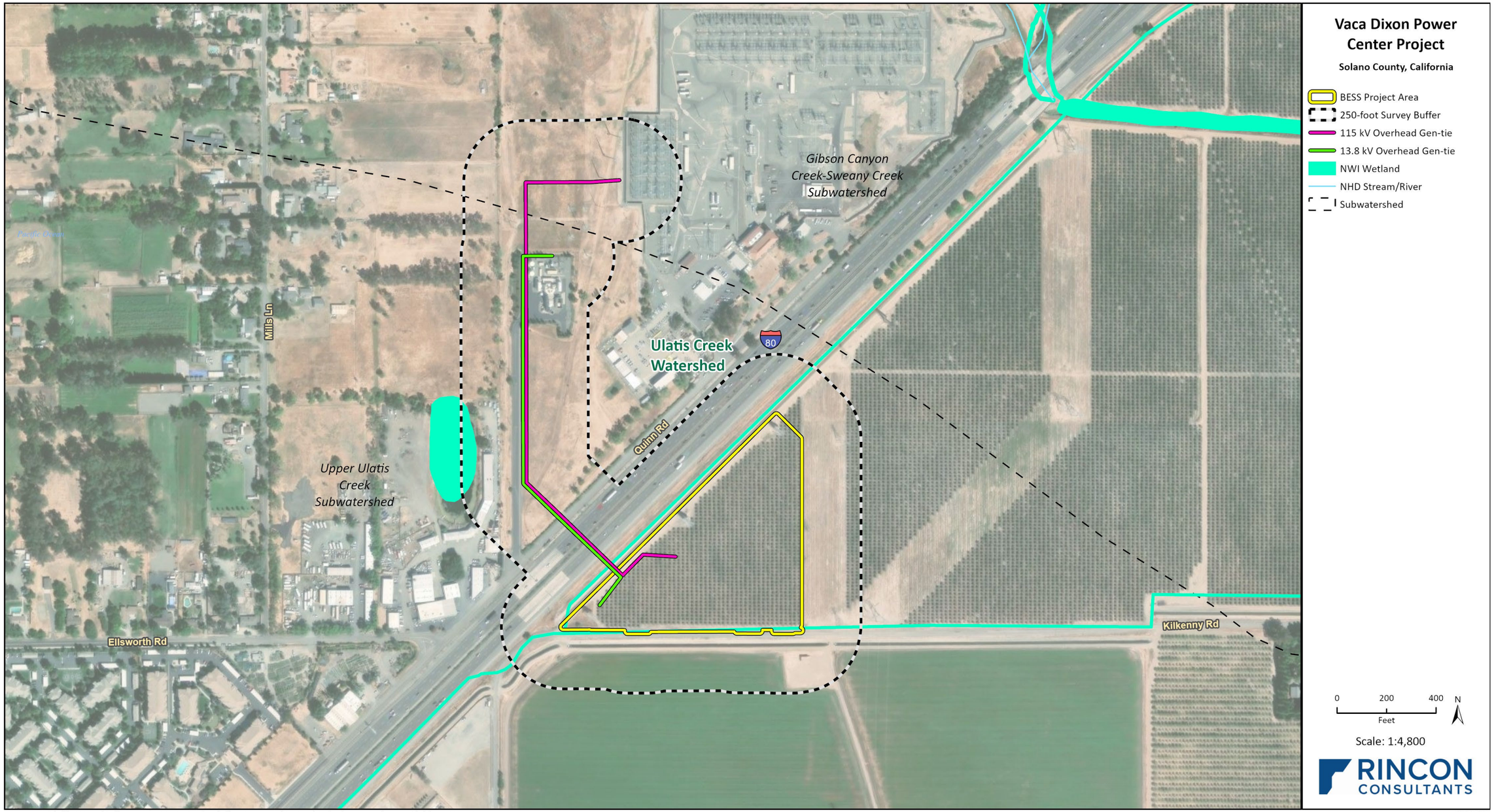

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Fig X-X Hydrology - Project Site

Figure 5.12-3 Soils within the Biological Study Area

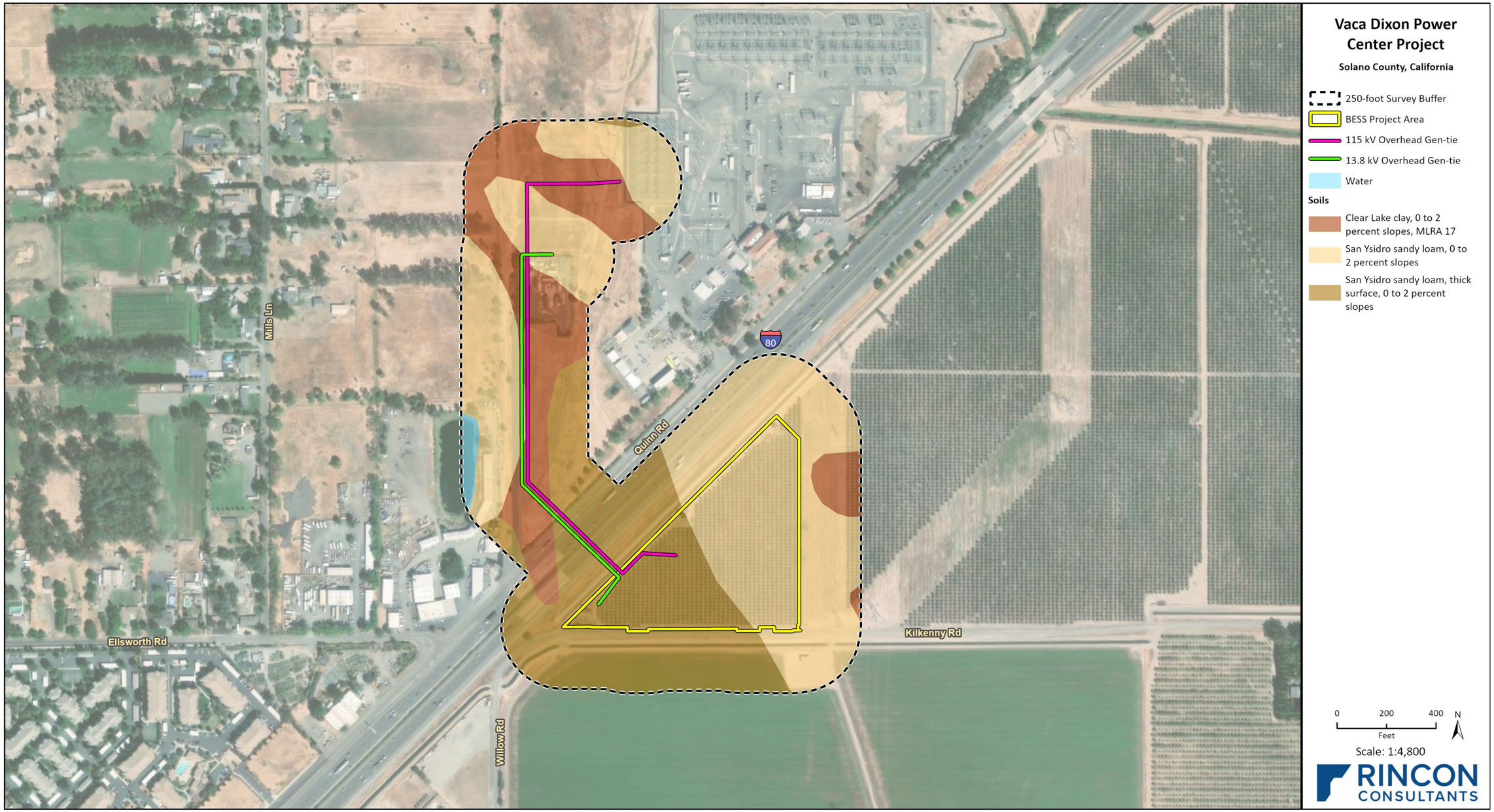

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Fig X Project Site with Soils

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Vegetation and Other Land Cover

Vegetation communities and land cover types identified in the BSA include non-native annual grassland, developed, orchard, agricultural fields, barren/ruderal, landscaped, open water, perennial rye grass fields, and fresh emergent wetland. Vegetation communities and land cover types are described below, and locations and extents for vegetation communities and land cover types within the BSA are shown on Figure 5.12-4a through 4c and summarized in Table 5.12-1.

Vegetation communities and land cover types within one mile of the BSA include urban residential, rural residential, business park, commercial highway, public open space, and a large amount of agriculture. The habitat types occurring and expected to occur within 1,000 feet of the Project Site do not differ greatly from those listed below (including, but not limited to aquatic, wetland, and grassland habitats), as the Project Site is located within a large portion of public/quasi-public land that is regularly maintained.

Table 5.12-1 Vegetation Communities and Land Cover Types within the BSA

Vegetation Community/Land Cover Type	Approximate Acreage[1]	CDFW Sensitive Community?
Non-native Annual Grassland	17	No
Developed	18	No
Orchard	12	No
Agricultural Fields	4	No
Barren/Ruderal	4	No
Landscaped	2	No
Open Water	1	No
Perennial Rye Grass Fields	1	No
Fresh Emergent Wetland	0.02	No

CDFW = California Department of Fish and Wildlife

[1] = Acreages are rounded to the nearest whole number, when applicable.

Figure 5.12-4a Overview of Vegetation and Land Cover Types within the Biological Study Area (Figure 1 of 3)

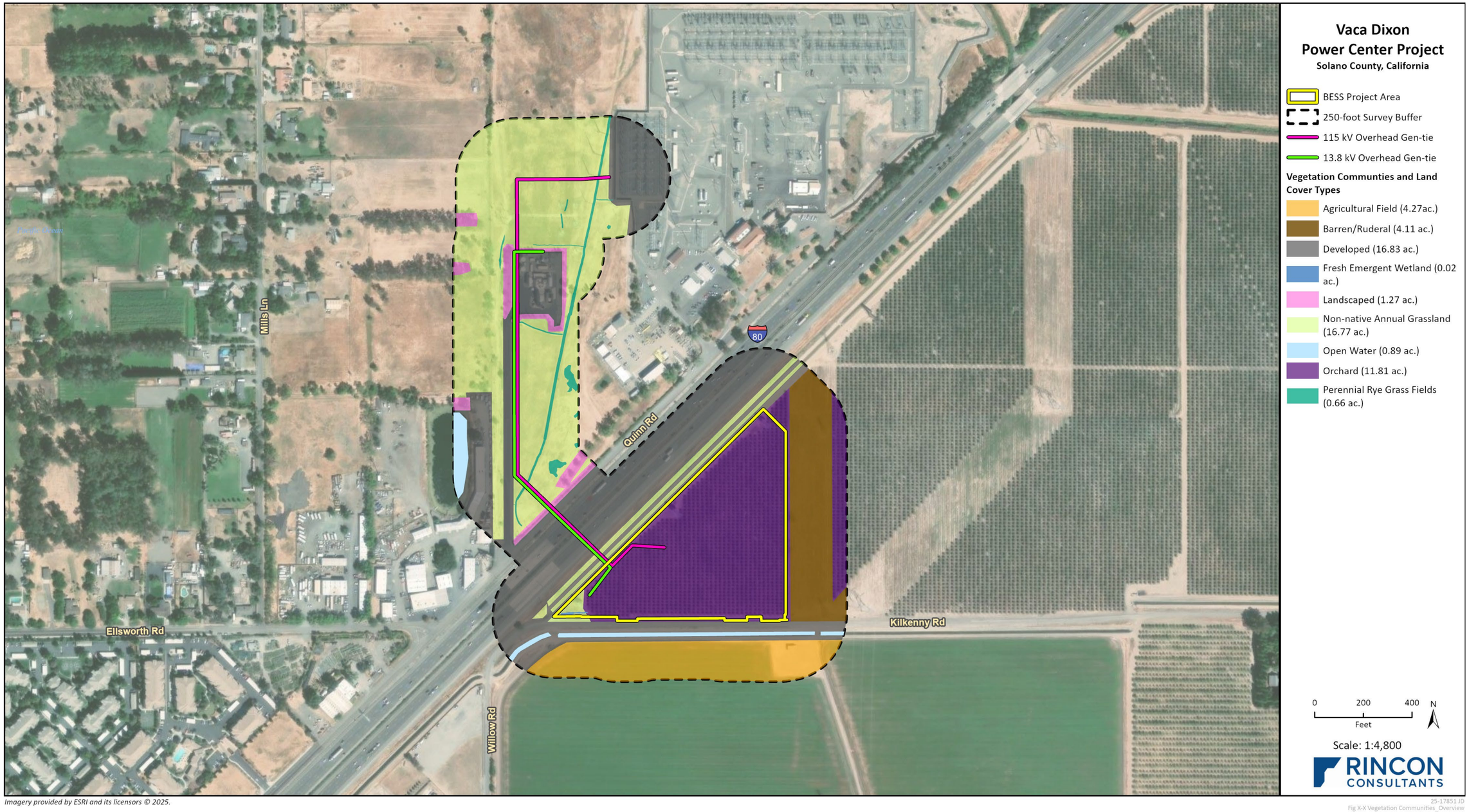

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Figure 5.12-4b Vegetation and Land Cover Types within the Biological Study Area (Figure 2 of 3)

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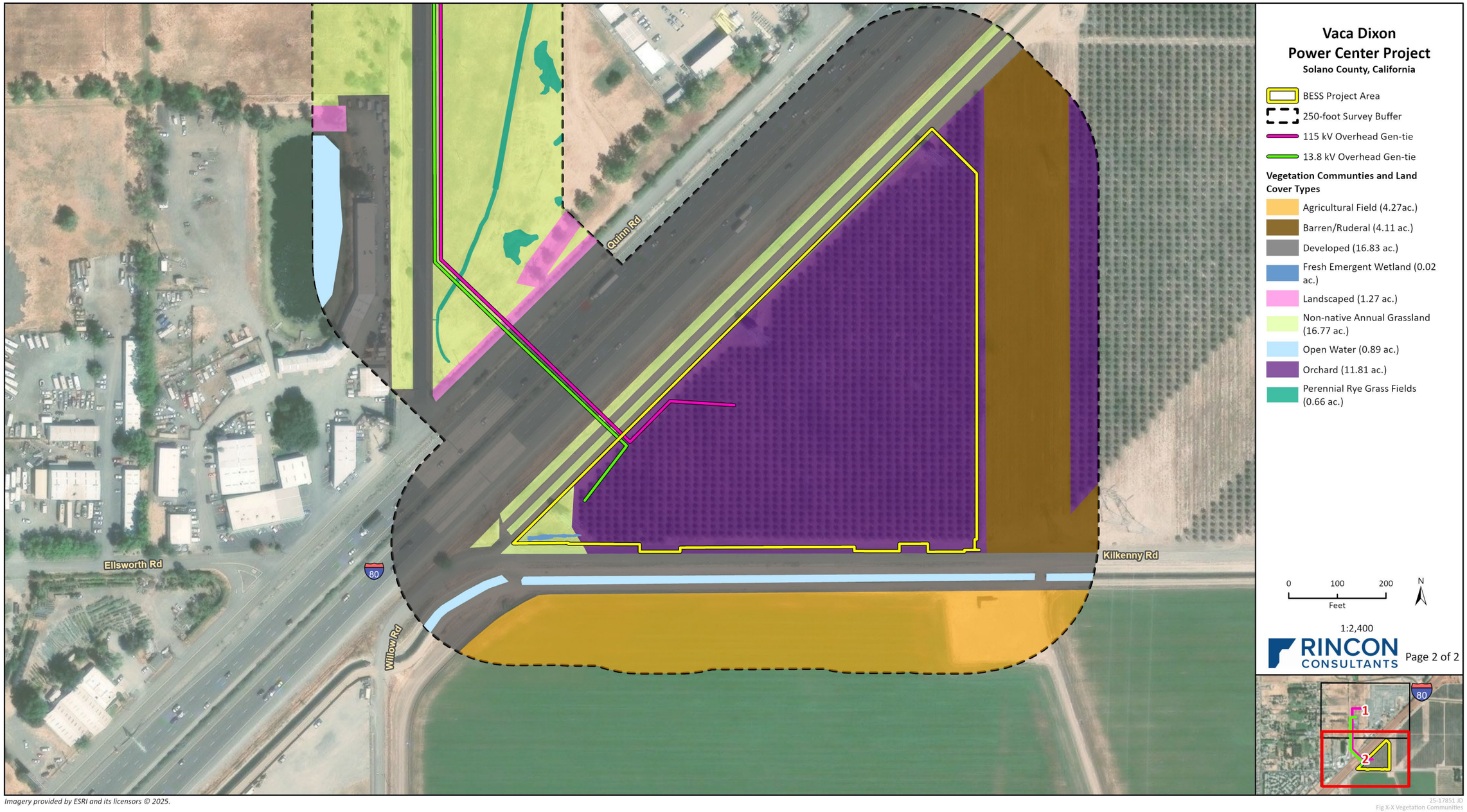
Figure 5.12-4c Vegetation and Land Cover Types within the Biological Study Area (Figure 3 of 3)



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General Wildlife

Wildlife detected during the field surveys was consistent with expectations for the existing site setting. Bird diversity was low overall and included common resident species and expected migrant species during spring and fall migratory seasons. Limited wildlife detections are likely a result of Interstate 80 (I-80), Highway-505, and Kilkenny Road occurring within the BSA, features which act as significant wildlife movement barriers and increasing the amount of human disturbance, noise, and light in the vicinity.

Raptor species, including Swainson's hawk and red-tailed hawk (*Buteo jamaicensis*) were observed soaring above the BSA or in the nearby vicinity of the BSA. California ground squirrels were observed in the southern BSA during field surveys. Some small mammal burrows were observed in the southern BSA along the transmission towers; however, no sign of recent activity (i.e., fresh dirt, scat) was observed at any of the burrows. Common bird species observed included northern mockingbird (*Mimus polyglottos*), California scrub jay (*Aphelocoma californica*), Canada goose (*Branta canadensis*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), red-winged blackbird (*Agelaius phoeniceus*), mourning dove (*Zenaida macroura*), yellow-billed magpie (*Pica nuttalli*), western kingbird (*Tyrannus verticalis*), and European starling (*Sturnus vulgaris*). Reptiles and amphibians observed included western fence lizard (*Sceloporus occidentalis*) and shoulderband snail (*Helminthoglypta* sp.). A full list of wildlife detected during the surveys is included in Appendix B of the BRTS (Appendix Y).

Biologically Important Site Features

Wildlife present and likely to be present throughout the BSA may use various natural and manmade elements within the BSA for movement, protection, foraging, nesting and/or roosting. These features include but are not limited to landscaped trees and shrubs, non-native annual grassland, small mammal burrows, perennial rye grass fields, open water and developed areas such as temporary and permanent access roads and pathways, transmission towers and associated lines, and buildings. These site features are anticipated to attract wildlife species based on their utility, relative to the species' needs. For example, a raptor may use a transmission tower as a foundation for their nest, whereas a passerine may use the transmission line for a clear view of their foraging area.

5.12.1.2 Field Surveys

Field surveys conducted as part of the Project biological study included reconnaissance surveys, a rare plant survey, a Swainson's hawk presence evaluation, burrowing owl (*Athene cunicularia*) surveys, large branchiopod surveys, Crotch's bumble bee (*Bombus crotchii*) surveys, and aquatic resources delineation surveys. A summary of field survey dates, personnel, and survey area locations are provided in Table 5.12-2 below. Field surveys incorporated varying survey areas within the BSA due to access restrictions and changes in the Project footprint and location. These survey areas are illustrated on Figure 5.12-5.

Table 5.12-2 Summary of Field Surveys

Survey Type	Date	Survey Area	Personnel	Qualifications
Swainson's Hawk Presence Evaluation	04/21/23	Northern BSA and 0.25-mile buffer	K. Asmus	MS, Biologist, 23 years of experience
			C. Rice	BS, Biologist, 7 years of experience
Field Reconnaissance Survey	04/24/23 04/25/23 05/14/24 05/17/24	Northern BSA	K. Asmus	MS, Biologist, 23 years of experience
			C. Rice	BS, Biologist, 7 years of experience
			A. Ennis	MS, Biologist, 15 years of experience
			G. Myers	BS, Biologist, 5 years of experience
Field Reconnaissance Survey	04/14/25	Southern BSA	N. Carpenter	BS, Biologist, 4 years of experience
			G. Myers	BS, Biologist, 5 years of experience
Aquatic Resources Delineation	04/24/23 05/14/24 05/17/24 07/24/24	Northern BSA	K. Asmus	MS, Biologist, 23 years of experience
			C. Rice	BS, Biologist, 7 years of experience
			A. Ennis	MS, Biologist, 15 years of experience
			G. Myers	BS, Biologist, 5 years of experience
			B. Elenzweig	BS, Botanist, 4 years of experience
Aquatic Resources Delineation	07/14/25	Southern BSA	O. Routt	BS, Biologist, 10+ years of experience
			G. Myers	BS, Biologist, 5 years of experience
Burrowing Owl Habitat Assessment and Breeding Season Protocol Surveys	04/14/25 05/07/25 06/02/25 07/14/25	Southern BSA	N. Carpenter	BS, Biologist, 4 years of experience
			G. Myers	BS, Biologist, 5 years of experience
			O. Routt	BS, Biologist, 10+ years of experience
Burrowing Owl Habitat Assessment	04/21/23	Northern BSA	K. Asmus C. Rice	MS, Biologist, 23 years of experience BS, Biologist, 7 years of experience
Habitat Assessment and Wet-season Listed Large Branchiopod Sampling	12/12/23 01/03/24 01/12/24 01/26/24 02/09/24 02/23/24 03/08/24 03/22/24 04/05/24	Northern BSA	B. Helm	PhD, Biologist, Ecologist, Botanist, 25+ years of experience, USFWS recovery permit #TE-795930-12
			K. Colima Aguirre	BS, Biologist, working under USFWS recovery permit #TE-795930-12
			Z. Einweck	BS, Biologist, working under USFWS recovery permit # TE-795930-10.2
Dry-season Listed Large Branchiopod Sampling	08/30/23	Northern BSA	B. Helm	PhD, Biologist, Ecologist, Botanist, 25+ years of experience, USFWS recovery permit # RP-Vaca Dixon Site-2023-0824
			K. Colima Aguirre	BS, Biologist, working under USFWS recovery permit # TE-795930-12
Habitat Assessment for Listed Large Branchiopods	07/12/25	Southern BSA	B. Helm	PhD, Biologist, Ecologist, Botanist, 25+ years of experience, USFWS recovery permit # RP-Vaca Dixon Site-2023-0824
Dry-season Listed Large Branchiopod Sampling	09/24/25	Southern BSA	B. Helm	PhD, Biologist, Ecologist, Botanist, 25+ years of experience, USFWS recovery permit # RP-Vaca Dixon Site-2023-0824

Survey Type	Date	Survey Area	Personnel	Qualifications
Crotch's Bumble Bee Protocol Surveys	07/15/25 07/30/25 08/14/25	Southern BSA	S. Moore	BS, Biologist, 2 years of experience, CDFW Bumble Bee MOU/SCP S-242390003-24239-001
			E. Shoemaker	BS, 1 year of experience, CDFW Bumble Bee MOU/SCP No. S-242420002-24249-001
			I. Kreger	MPhil, Biologist, 7 years of experience

Field Reconnaissance Survey

Rincon biologists conducted field reconnaissance surveys (field surveys) throughout the northern BSA on April 21-25, 2023, May 14-17, 2024, and July 24, 2024, and in the southern BSA on April 14, 2025 (Table 5.12-2, Figure 5.12-5). The field surveys focused on documenting existing conditions, including plant and wildlife species, field-verifying land cover types and vegetation communities, and evaluating the area for the potential to support special-status plant and wildlife species, sensitive plant communities, wildlife corridors and nursery sites, locally protected resources, and potential jurisdictional waters. Results of the field surveys were used to identify suitable habitat that may warrant focused protocol surveys or habitat assessments for a particular species or other more involved analyses, and to develop a research approach for evaluating existing biological resources in the BSA.

The field surveys were conducted on foot where accessible, and inaccessible areas were visually surveyed with binoculars. Particular attention was given to areas with lower levels of disturbance and a higher likelihood of supporting special-status species. Wildlife was detected via the observation of calls, tracks, scat, nests, or other signs of presence, and direct observation. Natural and semi-natural vegetation communities were identified and mapped. Classification of vegetation communities was based using *A Manual of California Vegetation, Second Edition* (MCV2) (Sawyer et al. 2009), which establishes systematic classifications and definitions of vegetation communities. Updates to the MCV2 provided in the online database (CNPS 2025b) were taken into consideration. Each vegetation mapping unit was analyzed for characteristics to define the applicable vegetation community, such as dominant or co-dominant plant species and community membership rules. Additionally, land covers were characterized in areas that appeared to be altered by anthropogenic activities (e.g., developed/disturbed). A compendium of plants and wildlife observed during surveys is included in Appendix B of the BRTS (Appendix Y). Representative site photographs taken during the surveys are included in Appendix C of the BRTS (Appendix Y).

Rare Plant Survey

A rare plant survey was completed within the southern portion of the northern BSA on April 24, 2023, in accordance with USFWS's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (2000a), and CDFW's *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (2018). This survey was conducted by qualified Rincon botanists walking transects in the southern portion of the northern BSA (Figure 5.12-5). This survey was initiated after the initial database review indicated that special-status plant species were previously documented near BSA. The timing for the rare plant survey was intentionally completed during peak blooming season when special-status plant

species with potential to occur were expected to be blooming and more easily identifiable, in accordance with USFWS and CDFW survey guidelines.

A formal rare plant survey was not conducted on the southern BSA; however, a Rincon biologist qualified to conduct a rare plant survey assisted with the field reconnaissance survey that took place on April 14, 2025. The biologist paid special attention to the plants occurring within the southern BSA throughout the duration of the survey. If observed on-site during the survey, the Rincon biologist would record the location and species of rare plant(s) observed. No special status plant species were observed during the field survey.

Swainson's Hawk Presence Evaluation

A one-time, focused survey for Swainson's hawk was conducted on April 21, 2023. This survey was completed due the presence of potentially suitable foraging habitat within the BSA and due to nearby documented occurrences of Swainson's hawk, identified in the desktop review, including records of a previously used nest site located approximately 0.25-mile west of the BSA. This survey was conducted using the general guidance presented in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The survey was performed throughout the northern BSA and a 0.25-mile survey buffer, which encompassed the southern BSA, during the breeding season (generally March through April) to obtain a baseline presence evaluation for this species and document potential nest sites (Figure 5.12-5). The survey included both a pedestrian and windshield survey performed by qualified Rincon biologists familiar with the species, using high powered binoculars. Due to the high number of occurrences of this species near the BSA, a previously used nest within 0.25-mile, and suitable foraging habitat within the northern BSA, this species is assumed to be present. As such, full protocol surveys were determined to be unnecessary and were therefore not initiated.

Burrowing Owl Habitat Assessment and Surveys

Habitat assessments and protocol surveys for burrowing owls were conducted by Rincon biologists familiar with this species in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012). A habitat assessment was completed within the northern BSA. Additional protocol-level burrowing owl surveys were not completed in the northern BSA due to lack of suitable habitat and site access restrictions.

A habitat assessment and breeding-season protocol-level burrowing owl surveys were completed for the southern BSA on April 14, May 7, June 2, and July 14, 2025 (Figure 5.12-5). The timing and survey methodology for the breeding season surveys were completed per the guidance outlined in CDFW's 2012 Staff Report. Following completion of the breeding season protocol surveys for the southern BSA, a report was prepared to further document the methodologies and results of the surveys and is provided as Appendix D of the BRTS (Appendix Y).

Large Branchiopod Protocol Surveys

Results of the literature and database review identified designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp as occurring approximately 5.2 miles south of the BSA, and multiple potentially suitable seasonal hydrological features were documented within the BSA during field surveys. Additionally, the CNDDB query yielded a small number of recorded observations of vernal pool fairy shrimp near the BSA, including some within one mile of the BSA. Dry season sampling surveys for large branchiopods were completed within the northern BSA on August 30, 2023, and wet season sampling surveys were initiated on December 12, 2023, and completed on April 5,

2024 (Figure 5.12-5). A habitat assessment of the southern BSA was completed on July 12, 2025, and dry season sampling was completed on September 24, 2025 (Figure 5.12-5). Suitable habitat for vernal pool fairy shrimp was observed in the southern BSA, therefore dry-season sampling was initiated. Results of the sampling efforts and results of the habitat assessments are provided as Appendices E through H of the BRTS (Appendix Y).

The sampling surveys were intended to determine presence/absence of these species using the guidance of the USFWS's *Survey Guidelines for the Listed Large Branchiopods* (2015). Surveys were completed by Brent Helm, PhD of Helm Consulting, a USFWS permitted biologist with a valid Section 10(a)(1)(A) recovery permit for these species.

Crotch's Bumble Bee Protocol Surveys

Crotch's bumble bee surveys were completed within the southern BSA on July 15, July 30, and August 14, 2025, by Rincon biologists (surveyors) qualified to conduct surveys for candidate bumble bee species. The surveyors conducted foraging and nesting surveys (described below) in accordance with *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW Survey Considerations), issued June 6, 2023 (CDFW 2023), and in compliance with the Memorandum of Understanding (MOU) for Crotch's bumble bee and western bumble bee issued to Principal Investigator Stella Moore (SCP S-242390003-24239-001) and Principal Investigator Elizabeth Shoemaker (SCP S- 242420002-24249-001) in February 2025, authorizing incidental take of the California Endangered Species Act Candidate Crotch's bumble bees during survey activities. The required notifications to conduct the MOU capture surveys were submitted to CDFW via email on June 30, 2025. A copy of the Crotch's bumble bee report is provided as Appendix I of the BRTS (Appendix Y).

Due to site access restrictions, Crotch's bumble bee protocol surveys were only conducted in the southern BSA (Figure 5.12-5) and not along the gen-tie corridors north of I-80.

Foraging Surveys

Foraging surveys consisted of meandering transect surveys, with the transect and surveyor spacing varying depending on the quality of the foraging habitat in any given area, with transects closer together in areas with a higher density of floral resources and farther apart in areas with sparse floral resources. If bumble bees were captured or observed during the surveys, they would be identified to species and caste.

Nesting Surveys

Nesting surveys were conducted to assess the presence of suitable nesting resources, including rodent holes/tunnels, or cavities within rock piles, brush piles, bunch grasses, leaf piles, pine needle duff, and vegetation mulch, and such potential nesting substrates were documented with representative photographs. Potential nesting sites were surveyed for active Crotch's bumble bee colonies by looking for concentrated bumble bee activity, and if a site was suspected to be occupied, it was observed to identify signs of bumble bees entering or exiting the entrance. If an active Crotch's bumble bee colony were to be observed, the location, vegetation cover type, slope, aspect, and distance to colony foraging location would be documented and photographed.

Aquatic Resources Delineation Surveys

Aquatic resources delineation (ARD) surveys were conducted in selected locations within the BSA due to access restrictions (Figure 5.12-5). Current federal and state methods and guidelines were used as guidance for identifying potential jurisdictional areas. Potential wetland features were evaluated for presence of wetland parameters, specifically including positive indicators for hydrophytic vegetation, hydric soils, and wetland hydrology, according to routine delineation procedure (USACE 1987, 2020).

Extents of potential jurisdictional features, sample points, and photo locations were mapped using a Juniper Systems® Geode Global Positioning System (GPS) unit with submeter accuracy with the use of aerial imagery. Wetland sample points were taken at representative locations to determine the presence/absence of positive indicators for each of three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology), where applicable. Soil test pits (wetland sample points or SP) confirmed the soil conditions and hydrology at the sample point. Soils data were collected and identified using a shovel and Munsell® Color (2009) soil color chart. Representative photographs of the ARD surveys can be found in the ARD Report (Rincon 2025) for the Project, provided as Appendix J of the BRTS (Appendix Y).

The biologists identified and mapped streams or other drainages that might exhibit positive indicators for an ordinary high water mark (OHWM) and which might constitute waters of the U.S. and/or state, as well as having a defined channel, bed and banks and any adjacent riparian habitat that could qualify as streambeds under Section 1602 of the California Fish and Game Code.

Figure 5.12-5 Project Related Survey Areas

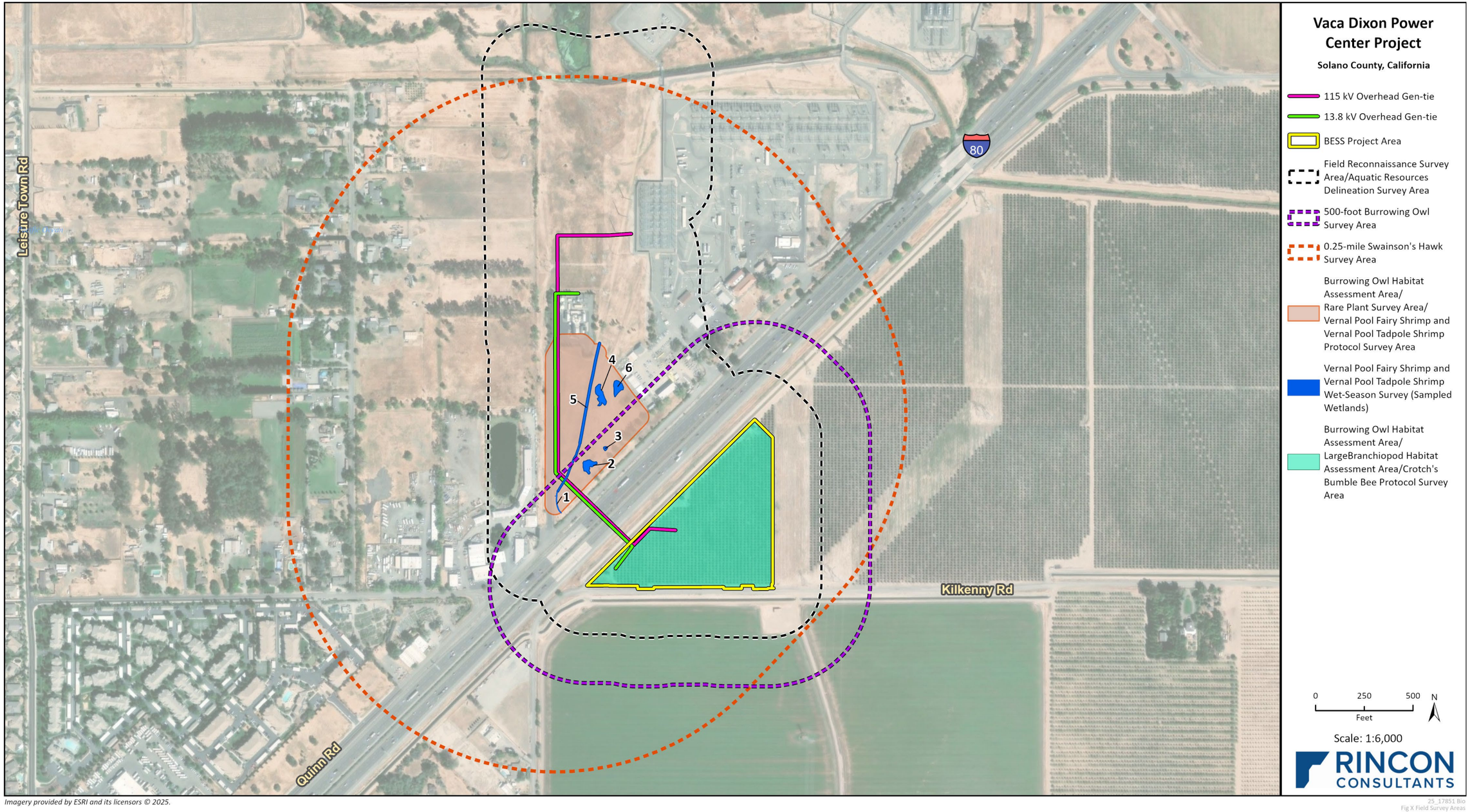

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Fig X Field Survey Areas

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5.12.1.3 Sensitive Biological Resources

This section discusses special-status species and sensitive biological resources observed in the BSA and evaluates the potential for the BSA to support additional sensitive biological resources. For the purposes of this analysis, sensitive biological resources, including sensitive or special-status species, are those that meet the criteria defined by California Energy Commission (CEC) in Appendix B, requirement 13(A) inclusive of:

- Species listed under the State or federal Endangered Species Act (ESA);
- Species receiving consideration during environmental review under the State CEQA Guidelines (14 CCR Section 15380);
- Species identified as state Fully Protected;
- Species covered by the Migratory Bird Treaty Act (MBTA);
- Species and habitats identified by local, state, and federal agencies as needing protection, including but not limited to those identified by the California Department of Fish and Wildlife (CDFW);
- Locally significant species that are rare or uncommon in a local context such as county or region or is so designated in local or regional plans, policies, or ordinances;
- Plant species listed as rare under the California Native Plant Protection Act; and
- Established native resident or migratory wildlife corridors or wildlife nursery sites.

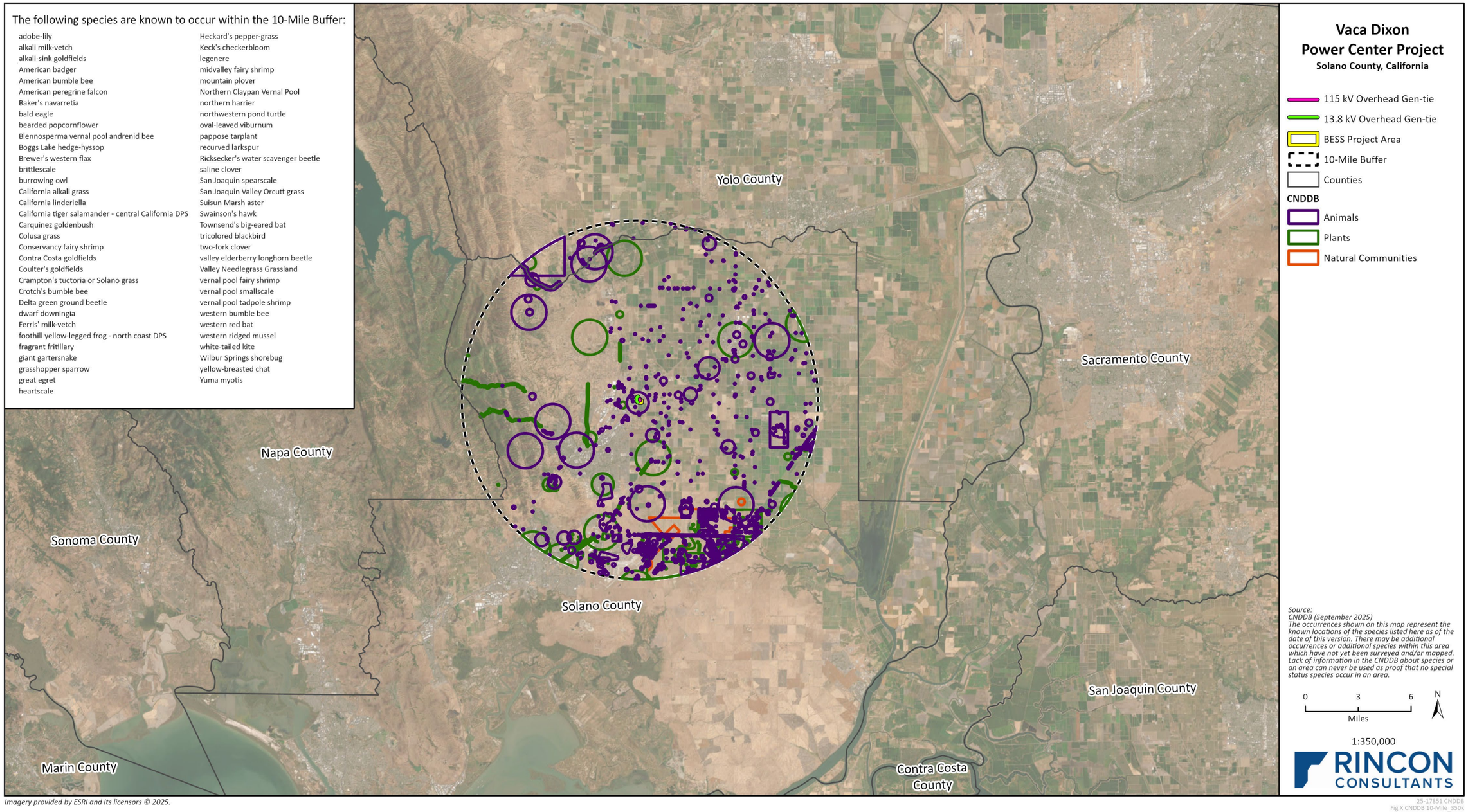
Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB and other sources such as iNaturalist and eBird, species occurrence records from other sites near the BSA, previous reports for the Project Site, and the results of surveys completed for the Project. The potential for each special-status species to occur in the BSA was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on the site if present (e.g., oak trees).
- **Low Potential.** Few of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** The species has been observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

Special-Status Species

The list of special-status plant and wildlife species known to occur within 10 miles of the BSA resulting from the literature review can be found in Appendix B of the BRTS (Appendix Y). All species identified in one or more CNDDB records within 10 miles of the BSA are shown in Figure 5.12-6. Special-status species and small mammal burrows observed during surveys overlaid with CNDDB data are shown in Appendix L of the BRTS. No nests were observed during any of the field surveys. A shapefile of all biological resources overlaid with the CNDDB data is included as an attachment to this application.

Figure 5.12-6 10-mile CNDDB Data



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Special-Status Plant Species

The evaluation of special-status plant species with potential to occur within the BSA included 41 species known to occur in the region (Appendix K of the BRTS [Appendix Y]). Thirty-nine of those species are not expected to occur based on having only historical documentation, specific habitat requirements not found within the BSA (e.g., mountains, forest, woodland, vernal pools), and/or because the BSA does not fall within the geographical or elevation range for the species. Two special-status plant species were determined to have a low potential to occur within the BSA (Table 5.12-3).

Table 5.12-3 Special-Status Plant Species with the Potential to Occur within the BSA

Common Name	Scientific Name	Status[1] (ESA/CESA/Other)	Potential to Occur
Baker's navarretia	*Navarretia leucocephala* ssp. *bakeri*	–/– 1B.1	Low Potential
bearded popcornflower	*Plagiobothrys hystriculus*	–/– 1B.1	Low Potential

[1] ESA = Federal Endangered Species Act

CESA = California Endangered Species Act

Status (Federal/State/Other)

CRPR (CNPS California Rare Plant Rank)

1B = Rare, Threatened, or Endangered in California and elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)

Special-Status Wildlife Species

Rincon evaluated 39 species known to occur in the region (Appendix K of the BRTS [Appendix Y]), including one species that did not appear in the literature and database search but was mentioned during discussions with the CEC, the California red-legged frog (*Rana draytonii*). Of those 39 species, 31 species are not expected to occur in the BSA based on the absence of shrubs, and deciduous woodlands; absence of vernal pools with hydroperiods of 12 weeks or more; and/or because the BSA does not fall within the geographical or elevation range for the species. Alternatively, the California red-legged frog is not expected to occur in the BSA based on zero recorded occurrences within 10 miles of the BSA (CDFW 2025a) and lack of suitable habitat within the BSA and therefore will not be discussed further. Four species were determined to have a low potential to occur within the BSA, one has a high potential to occur, two have a moderate potential to occur, and one, Swainson's hawk, is determined to be present in the BSA (Table 5.12-4). All wildlife species with potential to occur in the BSA could additionally occur within 1,000 feet and one mile of the Project Site and are discussed below. In addition, a discussion on California tiger salamander (*Ambystoma californiense*) is also provided below, following communications with the USFWS and occurrences of the species recorded within 10-miles of the BSA; however, the species is not expected to occur within the BSA.

Table 5.12-4 Special-Status Wildlife Species with the Potential to Occur within the BSA

Common Name	Scientific Name	Status[1] (ESA/CESA/Other)	Potential to Occur
Invertebrates			
Crotch's bumble bee	*Bonbus crotchii*	–/–/SCE	Low Potential (northern BSA) Not Expected (southern BSA)
vernal pool fairy shrimp	*Branchinecta lynchi*	FT/–/–	High Potential (northern BSA) Not Expected (southern BSA)
monarch butterfly	*Danaus plexippus*	FPT/–/–	Low Potential
Birds			
tricolored blackbird	*Agelaius tricolor*	–/ST/SSC	Low Potential (foraging) Not Expected (nesting)
burrowing owl	*Athene cunicularia*	–/SCE/SSC	Low Potential (nesting, foraging)
Swainson's hawk	*Buteo swainsoni*	–/ST/–	Present (foraging) Low Potential (nesting)
northern harrier	*Circus hudsonius*	–/–/SSC	Moderate Potential (Foraging) Not Expected (nesting)
white-tailed kite	*Elanus leucurus*	–/–/FP	Moderate Potential (foraging) Not Expected (nesting)

[1] **Federal Endangered Species Act (ESA) Status**

FE = Federally Endangered
FT = Federally Threatened
FPT = Federal Proposed Threatened

California Endangered Species Act (CESA) status

ST = State Threatened
SCE = State Candidate Endangered

Status (Other)

FP = CDFW Fully Protected
SSC = CDFW Species of Special Concern

Sensitive Natural Communities and Critical Habitat

Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. The CDFW ranks natural and sensitive communities using NatureServe's Heritage Methodology, the same system used to assign Global (G), and State (S) rarity ranks for plant and wildlife species in the CNDDB (NatureServ 2023, CDFW 2025a).

The BSA is not within or proximate to any defined USFWS critical habitat, and there are no CDFW listed Sensitive Natural Communities within the BSA (USFWS 2025a, CDFW 2025c).

Jurisdictional Waters and Wetlands

Aquatic resources delineated within the BSA were reviewed and evaluated for a preliminary assessment of limits of jurisdictional areas during ARD surveys (Rincon 2025). Results of the ARD surveys concluded that the BSA contains fourteen jurisdictional features, including nine seasonal wetlands (Seasonal Wetland 1 through 9), one swale (Swale), three agricultural ditches (Agricultural Ditch 1 through 3), and one man-made pond (Pond). Aquatic features delineated during the field surveys, and the proposed Project's limits of disturbance are shown in Figure 5.12-7. A summary of jurisdictional waters identified within the BSA is provided in Table 5.12-5. A map set of all delineated features with their respective agency acreage/linear feet, representative photographs of the various types of features, and all ARD datasheets are included in the Project's Aquatic Resources Delineation Report, found in Appendix J of the BRTS (Appendix Y).

One man-made ditch identified in the BSA was determined to be non-jurisdictional, as it lacked vegetation, changing substrate, or hydrology indicators, making bed and bank and OHWM indicators difficult to identify and properly map. Although culverts are present at the northern end of the ditch, the ditch did not provide a relatively permanent source of water, or a continuous surface water connection to a traditionally navigable water. Drainage features lacking identifiable jurisdictional indicators were identified as non-jurisdictional and are not discussed further in this report.

Figure 5.12-7 Aquatic Delineated Features within the BSA

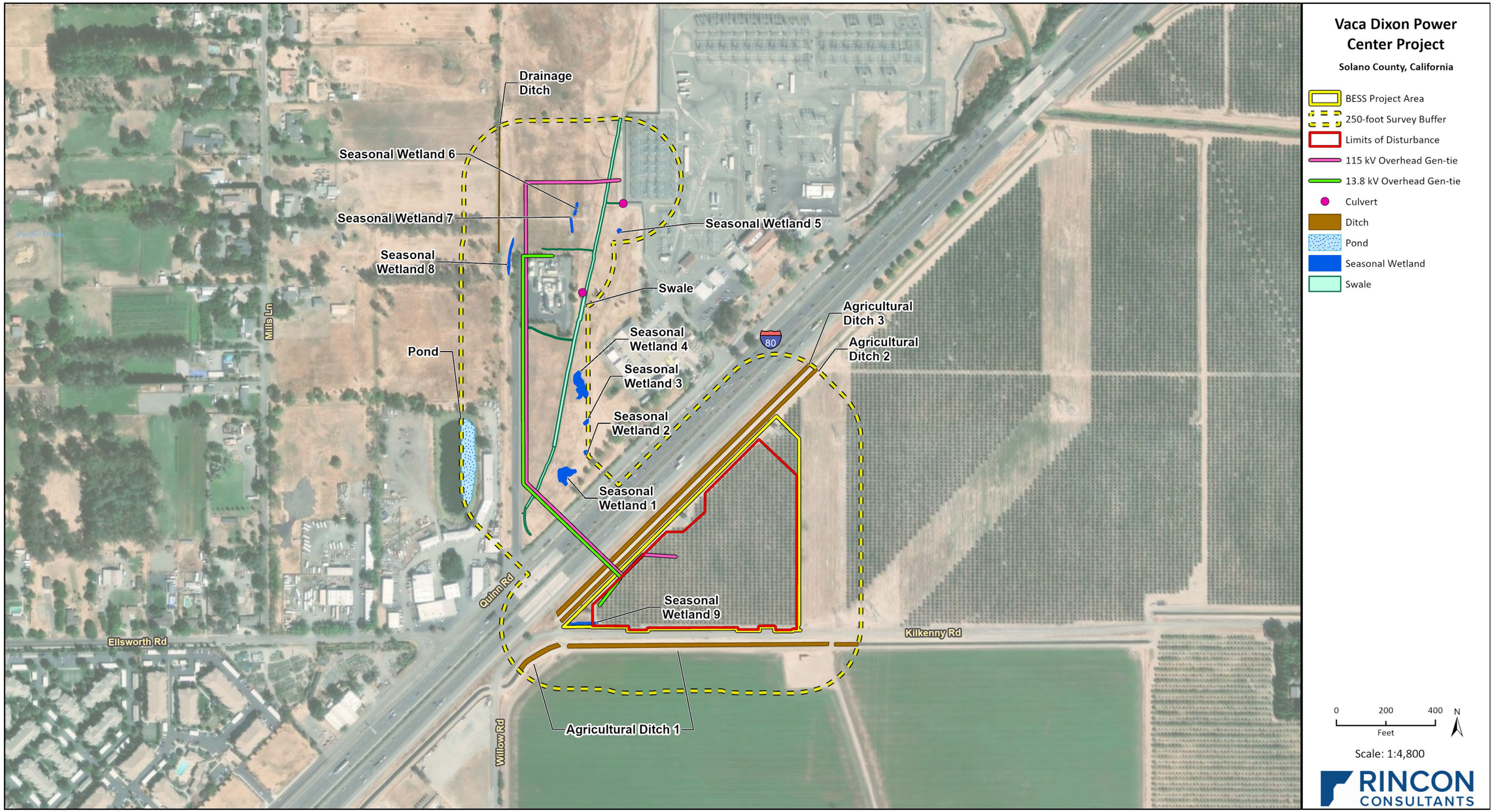

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Fig X Aquatic Features with Limits of Disturbance Overview

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Table 5.12-5 Jurisdictional Waters within the BSA

Aquatic Feature (acres)	USACE Jurisdiction		RWQCB Jurisdiction		CDFW Jurisdiction
	Non-Wetland Waters of the U.S.[1] (acres/lin. ft.)	Wetland Waters of the U.S. (acres/lin. ft)	Non-wetland Waters of the State[1] (acres/lin. ft.)	Wetland Waters of the State (acres/lin. ft.)	Streambed[2] (acres/lin. ft.)
Northern BSA					
Seasonal Wetland 1	–/–	–/–	–/–	0.06/80	–/–
Seasonal Wetland 2	–/–	–/–	–/–	0.01/20	–/–
Seasonal Wetland 3	–/–	–/–	–/–	0.01/26	–/–
Seasonal Wetland 4	–/–	–/–	–/–	0.08/112	–/–
Seasonal Wetland 5	–/–	–/–	–/–	0.01/17	–/–
Seasonal Wetland 6	–/–	–/–	–/–	0.01/53	–/–
Seasonal Wetland 7	–/–	–/–	–/–	0.01/62	–/–
Seasonal Wetland 8	–/–	–/–	–/–	0.02/150	–/–
Swale	–/–	–/–	–/–	0.47/2,252	0.47/2,252
Pond	–/–	–/–	0.40/372	–/–	–/–
Southern BSA				–/–	–/–
Agricultural Ditch 1	0.50/1,347	–/–	0.50/1,347	–/–	0.50/1,347
Agricultural Ditch 2	0.45/1,452	–/–	0.45/1,452	–/–	0.45/1,452
Agricultural Ditch 3	–/–	–/–	0.50/1,441	–/–	0.50/1,441
Seasonal Wetland 9	–/–	–/–	–/–	0.02/111	0.02/111
Total	**0.95/2,800**	–/–	**1.85/4,613**	**0.68/2,883**	**1.94/6,605**

[1] Calculated from Ordinary High Water Mark (OHWM)

[2] Calculated from top of bank or outer extent of associated wetland feature

Jurisdictional Features Within the Limits of Disturbance

All jurisdictional features within the BSA occur outside of the limits of the disturbance of the BESS facilities or associated gen-tie.

Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

Habitats within a linkage are not necessarily the same as those being linked. Rather, the linkage needs only contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species during periods of movement among areas of suitable habitat. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending on the species, a linkage may require specific

minimum physical characteristics (such as rock outcroppings, vernal pools, specific vegetation cover, etc.) to function as an effective wildlife corridor and allow those species to traverse the linkage. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a relatively short period of time.

The CDFW Biogeographic Information and Observation System website (CDFW 2025b), the *California Essential Habitat Connectivity Project: A Strategy for Conserving Connected California* (Spencer et al. 2010), and aerial and topographic imagery were reviewed to obtain information on wildlife movement near the BSA. Regionally, the BSA is not located within a defined Essential Connectivity Area, as mapped in Spencer et al. (2010). The BSA is not located within a mapped habitat linkage or corridor. The area surrounding the BSA is highly disturbed and developed with active agriculture and infrastructure associated with the existing VDPP and PG&E Vaca-Dixon Substation. Additionally, I-80 intersecting the BSA, and Highway 505 located to the west, can be considered significant movement barriers, restricting wildlife movements from the south, east, and west of the BSA. Therefore, the BSA is not considered an important regional wildlife movement area.

5.12.2 Regulatory Setting

Regulated or sensitive resources studied and analyzed herein include special-status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, regionally protected resources (e.g., from county-wide HCPs and NCCPs), and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, state, and local authorities.

A review of existing relevant LORS was conducted to understand the regulatory context for biological resource management surrounding the Project Site. The regulatory review included applicable federal, state, and local policies and regulations including, but not limited to the CEQA, ESA, Federal Clean Water Act (CWA), California Endangered Species Act (CESA), and the Solano County's General Plan. These regulations are detailed in Section 5.12.5.

Resources Protected by Local Policies and Ordinances

The proposed BESS Project Area is within the City of Vacaville, and the gen-tie alignment is in unincorporated Solano County. Thus, the CEC will need to consider both City and County policies when making a decision on the Project.

Chapter 4 of the City of Vacaville General Plan (Conservation and Open Space Element) includes goals, policies, and actions to ensure the comprehensive and long-range preservation and management of open space lands in and around the City for the protection of natural resources as a scenic resource. Two goals of this General Plan Element include: Goal COS-1: Protect and enhance habitat for sensitive species and natural communities; and GOAL COS-2: Preserve and restore Vacaville's creeks. Biological resources discussed in the policies and actions for these goals have been addressed in the sections above.

Chapter 4 of the Solano County General Plan (Resources) focuses on protecting natural resources within unincorporated Solano County. This chapter outlines distinct goals, policies and regulations used by the county in decision making to protect natural resources, focusing on conserving, preserving, and enhancing biological resources to ensure a high quality of life for current and future county residents. Biological resources discussed in the Solano County General Plan have been addressed in the sections above.

A table of Laws, Ordinances, Regulations, and Standards (LORS; "LORS Table") is provided in section 5.12.5.

Habitat Conservation Plans

The proposed BESS Project Area, within the southern BSA, is located within the City of Vacaville. The Solano County Water Agency is developing a multispecies Habitat Conservation Plan (Solano HCP) to further protect threatened and endangered species and their habitat, and the City of Vacaville is a member agency for the Solano HCP, as discussed in the Conservation and Open Space Element (Chapter 4) of the City's General Plan. The policies outlined in the Conservation and Open Space Element includes compliance with the Solano HCP until the HCP has been formally adopted. Unincorporated Solano County does not participate in the Solano HCP; therefore, compliance with the Solano HCP would not be applicable to the gen-tie portion of the Project (northern BSA), once approved.

5.12.3 Impact Analysis

Potential direct and indirect impacts to biological resources were evaluated to determine the permanent and temporary effects of Project construction, operation and maintenance (O&M), and closure activities.

5.12.3.1 Methodology for Impact Evaluation

Impacts are defined as Project-related activities that destroy, damage, alter, or otherwise affect biological resources. This may include injury or mortality to plant or wildlife species, effects on an animal's behavior (such as through harassment or frightening off an animal by construction noise), as well as the loss, modification, or disturbance of natural resources or habitats. Impacts are defined as direct and/or indirect and either permanent or temporary.

Direct impacts involve a direct physical change in the environment which is caused by and immediately related to the Project. Direct impacts for the Project may include injury, death, and/or disturbance of special-status wildlife species, if present in the work areas or vicinity. Direct impacts from direct physical changes to the environment may also include dust, noise, and traffic from construction machinery, or the destruction of vegetation communities necessary for special-status species breeding, feeding, or sheltering. Direct impacts to plants can include crushing of plants, bulbs, or seeds where present in the impact areas, as well as removal of vegetation communities during land use development activities.

Indirect impacts involve an indirect physical change in the environment which is not immediately related to the Project but is caused indirectly by the Project. A potential indirect physical change is considered only if it is reasonably certain to occur, rather than remote or speculative. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect impact. Specific examples for the Project may include activities that result in compacted soils or areas cleared of vegetation that, in the future, following completion of the Project, prevents wildlife from digging burrows, or facilitates site colonization by invasive species (particularly weedy plant species that outcompete native plant species) that over time negatively affect the local ecology. Other examples may include dust that drifts outside Project disturbance areas and covers native plants, thereby decreasing their photosynthetic capacity.

Temporary impacts to biological resources are those that are short-term or reversible over time, with or without implementation of recommended avoidance/minimization measures. Examples include the generation of fugitive dust and noise during Project implementation, trimming or crushing vegetation that would regrow following Project completion, and removed vegetation that would be actively restored. These temporary impacts are anticipated to last during Project implementation and shortly thereafter; however, the biological resources are anticipated to return to baseline after Project completion.

Permanent impacts that result in the long-term or irreversible loss of biological resources are considered permanent. For example, construction of a new electrical substation, which would result in a large, developed, and fenced property where native vegetation may have existed before, would have a permanent impact.

5.12.3.2 Impact Evaluation Criteria

The following threshold criteria, as defined by the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines), were used to evaluate potential impacts to biological resources. Based on these criteria, the Project would have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

Impact BIO-1 SPECIAL-STATUS SPECIES

Threshold:	Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Special-Status Plant Species

No Impact. Minimal suitable habitat for special-status plant species exists within the Project Site and only two species have a low potential to occur. The Project Site has been significantly disturbed by routine mowing, human presence, development, and active agriculture likely maintained with

pesticides and/or herbicides, all of which decreases the likelihood of special-status plant species inhabiting the area. No special-status plants were observed on-site during the rare plant survey or during the numerous other surveys completed within the Project Site. Therefore, no impacts to special-status plant species are expected to occur.

Special-Status Wildlife Species

Crotch's Bumble Bee

There is a low potential for Crotch's bumble bee to occur within the non-native annual grasslands in the northern BSA. Protocol surveys for the species completed in the southern BSA resulted in negative findings; the species is not expected to occur in the BESS Project Area.

DIRECT IMPACTS

Less than Significant with Mitigation. Potential direct impacts to Crotch's bumble bee during construction, operation, or decommissioning could include injury or death as a result of individuals being struck by vehicles or equipment, crushed or buried by Project vehicles, equipment, or displaced soil, accidental destruction of active nests by construction vehicles or equipment, or disturbance of individuals by construction-related noise and vibration. Temporary direct impacts would result from the loss of foraging habitat within laydown areas during construction activities that would ultimately be available after Project construction is complete (i.e., during post-construction and operation phases). Since the limits of disturbance for the BESS Project facilities are constrained south of I-80 where protocol surveys determined absence of the species, and gen-tie lines would be installed overhead within the Project Site north of I-80, direct impacts to Crotch's bumble bee are expected to be temporary and less than significant with the incorporation of avoidance and minimization measures.

INDIRECT IMPACTS

Less than Significant with Mitigation. Potential indirect impacts to Crotch's bumble bee during construction, operation, or decommissioning could include the degradation of foraging habitat or refugia and loss of burrow habitat through grading and other ground disturbing Project activities. Since the limits of disturbance for the Project BESS facilities are constrained south of I-80 where protocol surveys determined absence of the species, and gen-tie lines would be installed overhead within the Project Site north of I-80, indirect impacts to Crotch's bumble bee are expected to be temporary and less than significant with the incorporation of avoidance and minimization measures.

MITIGATION MEASURES

Direct and indirect impacts to Crotch's bumble bee would be reduced through implementation of measures BIO-1 (Construction Worker Environmental Awareness Training and Education Program), BIO-2 (Construction Best Management Practices), and BIO-3 (Pre-construction Biological Surveys and Biological Monitoring), which include a worker environmental orientation, incorporation of best management practices, and pre-construction biological surveys and biological monitoring.

Vernal Pool Fairy Shrimp

Due to the inconclusive results of the dry-season soil sampling that documented unidentifiable cysts, and through discussions with the USFWS, vernal pool fairy shrimp are expected to occur in the northern BSA under optimal conditions. In addition, in communications with the USFWS, any

potential suitable habitat within 250-feet is assumed to harbor vernal pool fairy shrimp. Therefore, there is a high potential for this species to occur in the northern BSA.

Based on the habitat assessment for large branchiopods completed by Helm (2025) in the southern BSA, potential habitat, although poor quality, was identified in multiple road ruts. Subsequent dry-season soil samples were collected from the road ruts and no cysts for large branchiopods were detected in the laboratory analysis. Therefore, vernal pool fairy shrimp are not expected to occur in the southern BSA.

DIRECT IMPACTS

No Impact. Potential direct impacts to vernal pool fairy shrimp during construction, operation, or decommissioning activities could include injury or death of individuals, and habitat loss from leveling out or filling in suitable habitat, or suitable habitat within 250 feet. Impacts to these suitable pool habitats would be limited to the northern BSA along the gen-tie route and would require obtaining an Incidental Take Permit pursuant to Section 10(a)(1)(B) of the federal ESA and completing associated compensatory mitigation requirements. The Project, however, has been designed to avoid potentially suitable habitat documented in the northern BSA. No other suitable habitat has been documented in the northern Project disturbance area, within 250 feet of the documented suitable vernal pool habitat; therefore, no direct impacts are expected in the northern BSA. Since this species was determined to be absent from the southern portion of the Project Site, direct impacts to this species in the southern BSA are not expected as a result of the Project.

INDIRECT IMPACTS

Less than Significant Impact. Potential indirect impacts to vernal pool fairy shrimp could include the potential stormwater runoff from Project activities entering potential suitable habitat during construction, operation, and decommissioning. Stormwater runoff from Project disturbance areas may result in degraded water conditions in breeding pools, inhibiting fairy shrimp survival. These impacts would be limited to the northern BSA, as this species is not expected to occur in the southern BSA. Further, ground disturbance would not occur within 250 feet of suitable fairy shrimp breeding pools, reducing the potential for substantial pollution to occur. Considering these factors, indirect impacts to vernal pool fairy shrimp would be less than significant.

MITIGATION MEASURES

Impacts to vernal pool fairy shrimp as a result of the Project would be less than significant, and would be further reduced through the implementation of measures BIO-1 (Construction Worker Environmental Awareness Training and Education Program), BIO-2 (Construction Best Management Practices), and BIO-3 (Pre-construction Biological Surveys and Biological Monitoring).

Swainson's Hawk

There is potential for Swainson's hawk to forage throughout the non-native grasslands within the Project Site, and nest on the utility transmission towers within the Project Site.

DIRECT IMPACTS

Less than Significant Impact. Potential direct impacts to Swainson's hawk include injury or death from electrocution on the gen-tie lines and substation and disturbance or human activity during construction, maintenance, or decommissioning that results in nest abandonment or failure. Because all Project transmission facilities would be designed consistent with the *Suggested Practices*

for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee [APLIC] 2006), electrocution events during operation would be minimized to the extent practicable and would be than significant. Temporary direct impacts may result from the loss of foraging habitat from increased human disturbance in the northern Project Site during construction activities that would ultimately be available after Project construction is complete. Permanent loss of foraging habitat during construction and operation is not anticipated as the presence of the gen-tie lines would still allow this species to use the area for foraging and the supporting structures would still allow for perching. Based on the Project footprint, minimal foraging habitat would be unavailable during Project site preparation, construction, and operation, as the plum orchard is not considered suitable foraging habitat and the barren/ruderal areas would still be available during all stages of construction. These temporary direct impacts to foraging habitat would be less than significant under CEQA due to the ample foraging habitat found within and near the Project Site, and the small acreage of the Project Site and anticipated Project impacts. In addition, avoidance and minimization measures have been recommended to further reduce impacts to less than significant.

INDIRECT IMPACTS

Less than Significant Impact. The introduction of fugitive dust, erosion, sedimentation, and potential runoff of hazardous materials during construction, maintenance, or decommissioning could indirectly impact Swainson's hawk by degrading habitat. However, due to the small size of the Project Site, availability of suitable foraging and nesting habitat in the areas surrounding the Project Site, indirect impacts to Swainson's hawk habitat would be less than significant under CEQA. In addition, avoidance and minimization measures have been recommended to further reduce impacts.

MITIGATION MEASURES

Direct and indirect impacts to Swainson's hawk would be less than significant under CEQA. However, impacts would be further reduced through the implementation of measures BIO-1 (Construction Worker Environmental Awareness Training and Education Program), BIO-2 (Construction Best Management Practices), BIO-3 (Pre-construction Biological Surveys and Biological Monitoring), BIO-4 (Pre-construction Nesting Bird Survey and Avoidance Buffers), and BIO-5 (Measures for Swainson's Hawk). Measures BIO-1 and BIO-2 provide education to allow construction workers to identify Swainson's hawk if present and specify areas throughout the site for permitted/not permitted activities with the intent to decrease the possibility of accidental injury or deaths as a result of Project activities. Measures BIO-3, BIO-4, and BIO-5 provide pre-construction surveys, biological monitoring, and a focused Swainson's hawk presence evaluation, which would assist in the identification of Swainson's hawk, and nests, within 0.25-mile of the Project Site, and provide nest buffers, as needed.

White-tailed Kite and Northern Harrier

White-tailed kites and northern harriers both have a moderate potential to forage in the northern portion of the Project Site due to the suitable grassland habitat but are not expected to nest in the Project Site due to the absence of sufficient nesting habitat and routine disturbance.

DIRECT IMPACTS

Less than Significant Impact. Direct impacts to white-tailed kites and northern harriers may include injury or death from electrocution on the gen-tie lines and substation facilities. Since all Project

transmission facilities would be designed in accordance with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC] 2006), these direct impacts would be less than significant. Temporary direct impacts to white-tailed kites and northern harriers may result from the increase of human disturbance in the northern BSA during construction activities that would ultimately be available after Project construction is complete. However, these direct impacts were determined to be less than significant under CEQA due to the ample foraging habitat found within the remainder of the Project Site and near the Project Site, and the small acreage of the Project Site and anticipated Project impacts. In addition, avoidance and minimization measures have been recommended to further reduce impacts.

INDIRECT IMPACTS

Less than Significant Impact. Project activities may potentially degrade the quality of foraging habitat for white-tailed kites and northern harriers, but due to the small area of the Project with viable foraging habitat in surrounding areas, such as along Gibson Canyon Creek or within the agricultural areas. Indirect impacts were determined to be less than significant. In addition, avoidance and minimization measures have been recommended to further reduce impacts.

MITIGATION MEASURES

Direct and indirect impacts to white-tailed kites and northern harriers would be less than significant under CEQA. Impacts would be further reduced through implementation of measure BIO-1 (Construction Worker Environmental Awareness Training and Education Program), BIO-2 (Construction Best Management Practices), BIO-3 (Pre-construction Biological Surveys and Biological Monitoring), and BIO-4 (Pre-construction Nesting Bird Survey and Avoidance Buffers) shall be implemented. Measure BIO-1 would provide construction workers with the ability to identify white-tailed kites if observed on-site and directs workers to a qualified designated biologist where needed. Measure BIO-2 reduces construction and construction-related activities to limited areas, allowing the remaining foraging habitat within the Project Area to be undisturbed. Measure BIO-3 includes pre-construction surveys and biological monitoring, allowing biological monitors to stop work activities. Measure BIO-4, a nesting bird survey, would confirm the absence of nesting individuals within the Project Site.

Birds Protected by the California Fish and Game Code and Migratory Bird Treaty Act

Less than Significant with Mitigation. Common bird species were observed throughout the Project Site, including many species that occur as residents and breed in the Central Valley. Native birds protected by the CFGC and the MBTA could potentially nest in all areas within the Project Site. Construction activity has the potential to directly impact nesting birds through the destruction of nests during vegetation clearing and reduced nesting success due to disturbance from Project activities; or indirectly through impacts to nesting habitat or degradation of foraging habitat from invasive plants, fugitive dust, erosion, and runoff. In addition, the presence of permanent BESS facilities in the BESS Project Area during the operation phase may cause bird species that would have otherwise nested in the southern Project Site to look for other nearby nesting habitat. Though impacts to nesting during the operation phase would be minor, due to the small size of the Project Site and ample nesting habitat in the nearby areas.

Alternatively, native birds protected by the CFGC and the MBTA that may forage in the northern portion of the Project Site may be temporarily directly and indirectly displaced during construction activities, by increased human activity, noise, lighting, and presence of construction equipment. Impacts that may occur during the operation phase include possible mortality and/or death by electrocution from the gen-tie lines or from bird strikes on the substation or gen-tie lines. Because Project transmission facilities would be designed in accordance with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC) 2006), these direct impacts would be less than significant.

Impacts to birds protected under the CFGC and MBTA would be reduced or avoided the implementation of avoidance and minimization measures.

MITIGATION MEASURES

Impacts would be reduced to less than significant through implementation of measure BIO-1 (Construction Worker Environmental Awareness Training and Education Program), which includes providing education to construction workers that may encounter nesting birds, BIO-3 (Pre-construction Biological Surveys and Biological Monitoring), which includes pre-construction surveys and biological monitoring, allowing biological monitors to stop work activities as needed, and BIO-4 (Pre-construction Nesting Bird Survey and Avoidance Buffers), which includes pre-construction nesting bird surveys and establishment of nest buffers, if nests are found. Indirect impacts would be reduced to less than significant by implementation of measure BIO-2, which requires implementation of best management practices, such as limiting the spread of weeds and retaining native foraging habitat for birds.

Impact BIO-2 SENSITIVE NATURAL COMMUNITIES AND CRITICAL HABITAT

Threshold:	Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. No CDFW listed Sensitive Natural Communities or Critical Habitat exist within the Project Site (CDFW 2025a, USFWS 2025a). The swale and seasonal wetlands in the northern Project Site exist within the perennial rye grass fields (*Lolium perenne* [*Festuca perennis*] Herbaceous Semi-Natural Alliance) categorization, which is not a CDFW sensitive natural community. Additionally, the agricultural ditches in the southern BESS Project Area would not be impacted by Project activities. Therefore, no impacts are expected to occur as a result of the Project.

Impact BIO-3 JURISDICTIONAL WATERS AND WETLANDS

Threshold :	Would the Project have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No aquatic resources exist within the limits of disturbance for the Project.

DIRECT IMPACTS

No Impact. Direct impacts to the aquatic resources within the Project Site could include site grading and excavation, soil compaction, and the presence and activity of equipment on-site, removing

and/or reducing and degrading the aquatic resources. The Project, however, has been designed to avoid aquatic resources in both the northern and southern BSA. No other aquatic resources are documented within the BSA, therefore, no direct impacts to aquatic resources are expected as a result of the Project.

INDIRECT IMPACTS

Less than Significant Impact with Mitigation. Indirect impacts could include the potential runoff from Project activities that result in degrading of aquatic resources. With the implementation of avoidance and minimization measures, these impacts would be reduced to less than significant.

MITIGATION MEASURES

Impacts to aquatic resources would be further reduced to less than significant through implementation of measures BIO-2 and BIO-6, which include best management practices to avoid, minimize impacts, and/or require compensatory mitigation for any permanent loss of habitat as result of Project activities.

Impact BIO-4 WILDLIFE MOVEMENT

Threshold:	Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The Project Site is not within a mapped regional wildlife linkage or corridor and is bordered by agriculture, residential areas, infrastructure, and vacant but disturbed areas, and is relatively fragmented overall. Local wildlife likely use the natural habitats in the Vaca Mountains to the west of the Project Site for movement; however, none of the Project component locations overlap these areas and construction and operation of the Project would not create a significant barrier for wildlife movement therein. The Project Site does not occur within a corridor that links between or among larger habitat areas on a regional basis and is not within any areas mapped as Essential Connectivity Areas by the California Essential Habitat Connectivity Project. Additionally, the Project Site is positioned between I-80 and Highway 505 on the south, southeast, and west sides, creating significant movements barrier for wildlife movement. Therefore, Project construction, operation, and decommissioning activities are expected to have no impact on wildlife movement.

Impact BIO-5 RESOURCES PROTECTED BY LOCAL POLICIES AND ORDINANCES

Threshold:	Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The BESS Project Area is located within the City of Vacaville. The City of Vacaville General Plan goals and policies addressing environmental elements that potentially apply to the proposed Project include policies to manage open space lands, protect native non-agriculture trees, minimize disturbance of natural habitats and vegetation, incorporate native vegetation in landscape plans and prohibit the use of non-native, invasive plant species, and compliance with the draft Solano HCP.

The BESS component of the Project does not occur within the three broad natural communities types identified in the City's General Plan, does not include removal of existing native non-agriculture or mature agriculture trees (i.e., all trees planned for removal are non-native agricultural plum trees), is not located within a high-priority habitat area or significant wildlife corridor, would avoid wetland areas, and would minimize disturbance of natural habitats and vegetation. Furthermore, required riparian setbacks are not applicable to the Project as riparian areas are absent from the southern BSA where the BESS facilities would be located. No special status species have been documented within the Project Site; therefore, the Project is not in conflict with the draft Solano HCP.

The gen-tie corridor associated with the Project is located in unincorporated Solano County, outside city limits, and therefore subject to compliance with Chapter 4 of the Solano County General Plan. The County General Plan requires projects to protect and enhance the County's biological resources, focusing on high-priority habitat areas, wildlife movement areas, oak woodlands, and habitat restoration, as applicable. The Project gen-tie is not located within a high-priority habitat area, significant wildlife corridor, contains no oak trees or oak woodlands, and does not include any current or ongoing habitat restoration efforts. Therefore, the Project would not conflict with Chapter 4 of the Solano County General Plan.

Impact BIO-6 HABITAT CONSERVATION PLANS

Threshold:	Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project is located within the Solano HCP. Though the Solano HCP has yet to be approved or adopted, the City of Vacaville is a member agency for the HCP, and the City's General Plan Policy COS-P1.12 states that one must comply with all the avoidance, minimization, and mitigation measures listed in the draft Solano HCP. The Project, and the avoidance and minimization measures incorporated herein, comply with draft Solano HCP measures. In addition, unincorporated Solano County chose to not participate in the HCP and therefore, the northern Project components, consisting of the gen-tie routes, would have no impact on the draft Solano HCP.

The Project, therefore, does not conflict with the draft Solano HCP, or any other adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCPs.

5.12.3.3 Cumulative Impacts

The geographic scope for cumulative biological resources impacts includes a 3-mile radius surrounding the Project Site. This geographic scope is appropriate for biological resources because it encompasses the mosaic of representative land cover and habitat types (and associated biological resources) affected by the Project, including primarily urban, agricultural, residential, commercial, and industrial development with areas of natural habitats.

Impacts of the Project would be considered "cumulatively considerable" if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant. The planned and pending projects in the Project vicinity are listed in Section 5 *Environmental Analysis*. Potential impacts that may result from this Project were analyzed to determine whether there would be cumulative impacts, and if cumulative impacts may occur, whether the Project would contribute to cumulatively considerable significant impacts.

The planned and pending projects within 3 miles of the Project Site include the construction and operation of residential and commercial development, retail/community facilities, utilities, restaurants, gas stations, and similar structures. Cumulative development in the area could contribute to the loss of habitat for special status species and cause further fragmentation of habitat and isolation of populations, and loss of wetlands. Together, cumulative projects could result in the degradation of the suite of habitat types and associated biological resources, including special-status wildlife species that occur within the cumulative setting and could result in overall diminished regional ecological functions and values. Permanent losses of listed species and their habitats would be a significant cumulative impact. However, impacts to biological resources would generally be mitigated on a project-by-project basis.

All potential impacts to special-status species (Impact BIO-1) and jurisdictional waters and wetlands (Impact BIO-3) associated with the Project would be reduced to a less than significant level with the implementation of mitigation measures and adherence to federal, state, and local regulations. Due to the small size of the limits of disturbance (approximately 10 acres), the temporary nature of the loss of potential foraging and nesting habitat, Project impacts to special-status species on a cumulative scale would be minor. Furthermore, with the implementation of Mitigation Measure BIO-6 (Measures for Jurisdictional Waters and Wetlands), all appropriate permits would be acquired to avoid and minimize impacts to these resources and compensatory mitigation would be completed as directed by the necessary regulatory agencies.

Because the Project would cause no impact related to riparian habitats or other sensitive natural communities (Impact BIO-2); conflicting with local policies or ordinances protecting biological resources (Impact BIO-5); conflicting with wildlife movement or corridors (Impact BIO-4); or conflicting with HCPs, NCCPs, or other approved local, regional, or state habitat conservation plans (Impact BIO-6), the Project's incremental effects would not be considered cumulatively considerable.

5.12.4 Recommended Avoidance and Minimization Measures

The following measures would reduce impacts to special-status species to a less than significant level in the Project component locations.

BIO-1 Construction Worker Environmental Awareness Training and Education Program

Prior to any activity on-site and for the duration of construction activities, all personnel shall attend a training as part of a Worker Environmental Awareness Program (WEAP) developed and presented by the qualified biologist or authorized designee. New personnel shall receive the WEAP training on the first day of work and prior to commencing work on the site.

1. The program shall include information on the life history of the Crotch's bumble bee, northern harrier, white-tailed kite, vernal pool fairy shrimp, burrowing owl, Swainson's hawk, and nesting birds as well as other wildlife and plant species that may be encountered during Project activities.
2. The program shall discuss the legal protection status of each species, the definition of "take" under the federal Endangered Species Act and California Endangered Species Act, measures for reducing impacts to biological resources, reporting requirements, contact information, and penalties for violation of the federal Endangered Species Act or California Endangered Species Act.

3. The program shall include contact information for the Project biologist and on-site environmental compliance manager.
4. The program shall provide information on how and where to bring injured animals for treatment in the case any animals are injured within the Project Area.
5. An acknowledgement form signed by each worker indicating that WEAP training has been completed shall be kept on record.

BIO-2 Construction Best Management Practices

The following best management practices shall be implemented during Project activities:

- Designation of a 15 mile per hour speed limit in all construction areas.
- All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access should be avoided to the greatest extent feasible.
- The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the goal of the Project.
- Designation of equipment washout and fueling areas to be located within the limits of grading at a minimum of 100 feet from any sensitive resources as identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site.
- Drip pans should be placed under all stationary vehicles and mechanical equipment that have leaking or discharging lubricants or other fluids.
- All trash shall be placed in sealed containers and should be removed from the Project area a minimum of once per week.
- Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.
- No pets are permitted on the Project area during construction.

BIO-3 Pre-construction Biological Surveys and Biological Monitoring

Prior to initial ground disturbing Project activities, including vegetation removal, a qualified biologist shall conduct a pre-construction survey to document site conditions, identify any wildlife that may be in harm's way, confirm the Project disturbance limits, and to provide recommendations to avoid unnecessary impacts to sensitive biological resources. If wildlife, including special status species, are found within the immediate Project disturbance area and the individual(s) are likely to be killed or injured by construction activities, work shall be stopped and the qualified biologist shall be contacted immediately. The biologist shall be allowed sufficient time to capture and relocate the animal(s) from the Project Site before construction activities begin, or contact the local U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) office to determine next steps for any special status species encountered. At no time will a federally or state-listed species be handled without prior approval by the appropriate regulatory agency (USFWS/CDFW). In the event the species is not identified as a listed special status species, the qualified biologist shall relocate the individuals the shortest distance possible to a location that contains suitable habitat not likely to be affected by Project activities. The biologist shall maintain sufficiently detailed records of any individual observed, captured, relocated, etc., including size,

coloration, any distinguishing features and photographs (preferably digital) to assist in determining whether relocated animals are returning to the Project.

BIO-4 Pre-construction Nesting Bird Survey and Avoidance Buffers

A general pre-construction nesting bird survey shall be conducted by a qualified biologist within seven days prior to the initiation of construction activities if construction is expected to commence during the nesting bird season (February 1 to August 31). If construction is stopped for more than seven days during the nesting season, a pre-construction survey should be conducted prior to the restart of construction activities. Surveys shall include the disturbance area plus a 100-foot buffer for passerine species and a 300-foot buffer for raptors.

If active nests are located, an appropriate avoidance buffer shall be established within which no work activity would be allowed which would impact these nests. The avoidance buffer would be established by the qualified biologist on a case-by-case basis based on the species and site conditions. Larger buffers may be required depending upon the status of the nest and the construction activities occurring near the nest. The buffer area(s) shall be closed to all construction personnel and equipment until juveniles have fledged and/or the nest is inactive. A qualified biologist shall confirm that breeding/nesting is complete, and the nest is no longer active prior to removal of the buffer. If work within a buffer area cannot be avoided, then a qualified biologist shall be present to monitor all Project activities that occur within the buffer. The biological monitor should evaluate the nesting avian species for signs of disturbance and should have the ability to stop work.

BIO-5 Measures for Swainson's Hawk

One pre-construction survey shall be conducted to search for Swainson's hawk nests within 0.25-mile of the proposed Project, generally following guidance in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000).

In the event an active Swainson's hawk nest(s) is found within 0.25-mile and Project activities will occur during the Swainson's hawks nesting season (February 15 through September 15), a qualified biologist shall be present daily during any activities within the Project Site, including access routes, that are within 0.25-mile of the active nest(s) to monitor the behavior of the potentially affected Swainson's hawks. The qualified biologist shall have the authority to order the cessation of all Project activities if the bird(s) exhibits distress and/or abnormal nesting behavior (swooping/stooping, excessive vocalization [distress calls], agitation, failure to remain on nest, failure to deliver prey items for an extended time period, failure to maintain nest, etc.), which may cause reproductive failure (nest abandonment and loss of eggs and/or young).

BIO-6 Measures for Jurisdictional Waters and Wetlands

The Project shall be designed to avoid potentially jurisdictional aquatic features where feasible. If impacts to potentially jurisdictional waters/wetlands of the State and are unavoidable, then the Project proponent shall consult with USACE, RWQCB, and CDFW (via the AB 205 Opt-in process) to obtain the following permits, if required: CWA Section 404 from USACE for impacts to waters of the U.S.; Waste Discharge Requirement from the Central Valley RWQCB for impacts to waters of the State; and a CDFW Notification of Lake or Streambed Alteration. The Project proponent shall abide by all permit conditions, and compensatory mitigation for all permanent impacts to waters/wetlands of the State shall be completed at the ratio required by the applicable permits, no

less than 1:1. Compensatory mitigation may be in the form of an in-lieu fee payment or purchase of mitigation bank credits.

5.12.5 Laws, Ordinances, Regulations, and Standards

This section lists and discusses the biological resource LORS that apply to the Project. Consistent with the California Code of Regulations (CCR) Title 20 Division 2 Section 1704(a) Appendix B requirements, all plans and policies applicable to the BSA are summarized below. Table 5.12-6 summarizes the LORS relevant to the Project.

Table 5.12-6 LORS Applicable to Biological Resources

Jurisdiction	LORS	Applicability	Opt-In Application Reference	Project Conformity
Federal	Federal Endangered Species Act (ESA; 16 USC 1531 *et seq.*)	Designates and protects federally threatened and endangered plants and animals and their critical habitat. Applicants for projects that could result in adverse impacts to any federally listed species are required to consult with and mitigate potential impacts in consultation with USFWS.	Throughout this Opt-In Application	The Project would potentially impact federally listed species. The Project will include mitigation measures to reduce impacts to federally listed species to a less than significant level.
Federal	Migratory Bird Treaty Act (MTBA; 16 USC 703 to 711)	Protects specified non-game migratory birds, including nests and eggs.	Section 5.12.1	The Project would potentially impact migratory bird species. The Project will include mitigation measures to reduce impacts to resident and migratory birds to a less than significant level.
Federal	Bald and Golden Eagle Protection Act (16 USC 668)	Specifically prohibits the taking of bald and golden eagles, including their parts (feathers), nests, or eggs.	Section 5.12.1	This Project is not anticipated to impact bald or golden eagles or their habitat.
Federal	Clean Water Act (Section 404)	Authorizes the USACE to issue permits regulating the discharge of dredged or fill materials into waters of the U.S.	Section 5.12.1	The Project is not anticipated to impact waters of the U.S.
State	Clean Water Act (Section 401)	Requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 permit) to provide State certification that the proposed activity will not violate State and federal water quality standards.	Section 5.12.1	The Project is not anticipated to impact navigable waters.
State	Porter-Cologne Water Quality Control Act	Requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB.	Section 5.12.2	The Project is not anticipated to impact waters of the State.
State	California Endangered Species Act (CESA; Game Code Section 2050 *et seq*.)	Designates and protects state threatened and endangered plants and animals and their habitats. Applicants for projects which could result in the incidental take of any state listed species are required to obtain an Incidental Take Permit and implement mitigation measures for impacts to state listed species.	Throughout this Opt-In Application	The Project would potentially impact state listed species. The Project will include mitigation measures to reduce impacts to state listed species to a less than significant level.

Jurisdiction	LORS	Applicability	Opt-In Application Reference	Project Conformity
State	Fish and Game Code Sections 3511, 4700, 5050, and 5515	Designates 33 species of wildlife as Fully Protected. Fully Protected species may not be taken or possessed, except under highly specific circumstances.	Throughout this Opt-In Application	The Project would potentially impact Fully Protected species. The Project will include mitigation measures to reduce impacts to Fully Protected species to a less than significant level.
State	Fish and Game Code Sections 3503, 3503.5, 3513, and Senate Bill 147	Provides protection to native birds, specifically preventing the take, possession, or destruction of nests, eggs, birds-of prey, and migratory non-game birds.	Throughout this Opt-In Application	The Project would potentially impact native bird nests, eggs, birds-of-prey, or migratory non-game birds. The Project will include mitigation measures to reduce impacts to native bird nests, eggs, birds-of-prey, or migratory nongame birds to a less than significant level.
State	Native Plant Protection Act (Fish and Game Code Section 1900 *et seq.*)	Authorizes the State to designate and protect certain native plants as endangered or rare. Take of endangered or rare native plants is generally prohibited, except under certain highly specific circumstances.	Throughout this Opt-In Application	The Project is not anticipated to impact any endangered or rare native plant species.
State	Fish and Game Code Section 1602 *et seq.*	Prohibits alteration of any lake, river, or stream, including intermittent and seasonal channels and many artificial channels, without notification to CDFW.	Section 5.12.2	This Project would potentially impact CDFW-jurisdictional features. The Project's applicants will provide a 1602 notification with this Opt-in Application.
State	California Environmental Quality Act	CEQA requires state and local agencies to identify the environmental impacts of proposed projects and consider alternatives and mitigation measures prior to approving them.	Section 5.12.3	This Project's environmental impacts will be analyzed by the CEC via AB205 permitting process.
State	Assembly Bill 205	Amends the Warren Alquist Act, extending an optional state-level permitting process to qualifying renewable energy generation and storage project.	Throughout this Opt-In Application	This Project qualifies for permitting via AB205 and intends to pursue this process.

Jurisdiction	LORS	Applicability	Opt-In Application Reference	Project Conformity
Local	City of Vacaville General Plan: Policy COS-P1.2 Policy COS-P1.5 Policy COS-P1.6 Policy COS-P1.7 Policy COS-P1.8 Policy COS-P1.10 Policy COS-P1.12 Policy COS-P2.2 Policy COS-P2.3	Policies outlined in the City of Vacaville General Plan focus on protecting and enhancing habitat for sensitive species and natural communities (Policy COS-P1.2, Policy COS-P1.5 through -P1.8, Policy COS-P1.10 and -P1.12) and preserving and restoring City of Vacaville's creeks (Policy COS-P2.2 and Policy COS-P2.3).	Section 5.12.5	This Project would be consistent with applicable policies from the City of Vacaville's General Plan and the County's General Plan through Project design and implementation of applicable mitigation measures.
Local	Solano County General Plan: Policy RS.P-1 Policy RS.P-2 Policy RS.P-3 Policy RS.P-4 Policy RS.P-5 Policy RS.P-6	Policies outlined in the Solano County General Plan focus on enhancing, conserving, and managing natural habitats (Policy RS.P-1 through -3), protecting special-status species, wetlands, sensitive natural communities, and habitat connections (Policy RS.P-1), identifying feasible and economical methods of protecting biological resources and habitats (Policy RS.P-4), maintaining wildlife movement corridors (Policy RS.P-5), and protecting oak woodlands and heritage trees (Policy RS.P-6).	Section 5.12.5	This Project would be consistent with applicable policies from the County's General Plan through Project design and implementation of applicable mitigation measures.

5.12.5.1 Federal LORS

Federal Endangered Species Act

The USFWS and the National Marine Fisheries Service (NMFS) share responsibility for implementing the federal ESA. Generally, the USFWS implements the ESA for terrestrial and freshwater species, while the NMFS implements the ESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered wildlife species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 is intended to ensure the sustainability of populations of all protected migratory bird species. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS. The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

- It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
- Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
- New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act (MBTRA) limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The MBTA requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Clean Water Act Section 404

Congress enacted the CWA "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas."

"Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. Specifically, the USACE's regulations define "waters of the United States" as follows, though some exceptions apply:

(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 paragraph (a)(5) of this section;
(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
(4) Wetlands adjacent to the following waters:
   (i) Waters identified in paragraph (a)(1) of this section; or
   (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds, not identified in paragraphs (a)(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 paragraph (a)(1) or (a)(3) of this section.

The term "Adjacent" means "having a continuous surface connection" (33 CFR 328.3(c)(2)). Authorization from with the USACE is required for any project that discharges dredge or fill into USACE jurisdictional waters of the U.S.

5.12.5.2 State LORS

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide State certification that the proposed activity will not violate State and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects.

The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit. For this Project, the Central Valley Regional Water Quality Control Board would be the consulting water board.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution.

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB (for this Project, the Central Valley Regional Water Quality Control Board). The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). The SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* establish a process for permitting for dredging and fill

activities. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

California Endangered Species Act

The CESA (Fish and Game Code Section 2050 *et. seq*.) prohibits take of State listed threatened or endangered species. Take under CESA is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA's protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Fish and Game Code Sections 3511, 4700, 5050, and 5515/Senate Bill 147

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the CFGC, which prohibit take of species designated as Fully Protected. CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. Exceptions include situations where a NCCP is in place that authorizes take of the fully protected species, or specific eligible project types as described in the newly passed Senate Bill 147, including:

- Maintenance, repair, or improvements to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources.
- Maintenance, repair, or improvements to critical regional or local water agency infrastructure.
- Transportation projects, including associated habitat connectivity and wildlife crossings, undertaken by a state, regional, or local agency, that does not increase highway or street capacity for automobile or truck travel.
- Wind projects and appurtenant infrastructure improvements, including associated electric transmission projects to the point of grid interconnection.
- Solar photovoltaic projects and appurtenant infrastructure improvements, including associated electric transmission projects to the point of grid interconnection.

Fish and Game Code Sections 3503, 3503.5, and 3513

CFGC sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a State-level offense to take any bird in violation of the federal MBTA.

Native Plant Protection Act

CDFW also has authority to administer the Native Plant Protection Act (NPPA; Fish and Game Code Section 1900 *et seq*.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and regulates the take of listed plant

species. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare."

Fish and Game Code Section 1602 *et seq.*

CFGC section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying CDFW of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFW determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, the plain language of CFGC Section 1602, applicable court decisions, CDFW regulations, and various guidance documents have shed light on the appropriate limits of CDFW jurisdiction. Based on these sources, a "stream" may flow perennially or episodically, includes land below the "top of bank," and may have one or more channels. These tenets, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

California Environmental Quality Act

The CEQA requires projects carried out by local or state government agencies, as well as those projects that require discretionary approval from local or state agencies (e.g., permits, licenses, etc.), to undergo an environmental review process that allows for a thorough assessment and mitigation of the environmental impacts of the proposed Project. Through a comprehensive process of environmental review and documentation, CEQA requires agencies to identify, disclose, and if possible, avoid, minimize or mitigate adverse effects on the environment. This entails the preparation of Environmental Impact Reports (EIRs) or other appropriate documentation, enabling informed decision-making by public agencies and the general public.

Within the framework of CEQA, there exist specific exceptions that allow for streamlined review processes under certain circumstances. Categorical exclusions, for instance, pertain to certain categories of projects that have been determined to have negligible impacts on the environment. These projects are exempted from the full CEQA review process, expediting their approval. Additionally, findings of consistency with adopted plans or regulations can lead to exceptions, wherein if a project aligns with established guidelines, it may not require extensive CEQA analysis. However, it is important to note that these exceptions are subject to careful scrutiny and must be based on substantial evidence.

The Warren Alquist Act/Assembly Bill 205

The Warren-Alquist Act provides the CEC with jurisdictional authority over the construction and operation of thermal power plants and related facilities, establishing CEC certification in lieu of any otherwise required state and local permits and superseding any otherwise applicable state or local policies, laws, regulations and ordinances. AB 205 (Chapter 61, 2022) expands CEC's authority under the Warren-Alquist Act to establish a new certification program for eligible non-fossil-fueled power plants and related facilities to optionally seek certification from the CEC, using emergency rulemaking authority provided by AB 205. Through Memorandums of Understanding, the CEC, CDFW and the SWRCB and RWQCBs have established consultation processes to ensure AB 205's requirements related to the regulation of fish, wildlife and water resources are met.

5.12.5.3 Local LORS

City of Vacaville General Plan

The City of Vacaville's General Plan focuses on the preservation and management of open space lands, and the conservation of natural resources within and around the City of Vacaville. Below are policies provided in Chapter 4 of the General Plan, which outline the strategies that are used to conserve the County's biological resources related to the Project:

Goal COS-1: Protect and enhance habitat for sensitive species and natural communities.

- **Policy COS-P1.2**: Manage natural open space lands, where feasible, in a manner consistent with wildlife protection.
- **Policy COS-P1.5**: Continue to protect mature trees and existing native non-agricultural trees.
- **Policy COS-P1.6:** Require that new development minimize the disturbance of natural habitats and vegetation. Require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.
- **Policy COS-P1.7:** Encourage new development to incorporate native vegetation into landscape plans.
- **Policy COS-P1.8:** Prohibit the use of invasive, non-native species, as identified by the State or County Department of Agriculture or other authoritative sources, in landscaping on public property or in common areas in private developments.
- **Policy COS-P1.10:** Where avoidance of wetlands is not practicable or does not contribute to long-term conservation of the resources, require new development to provide for off-site mitigation that results in no net loss of wetland acreage and functional value within the watersheds draining to the Delta or Suisun Marsh.
- **Policy COS-P1.12:** Until the Solano Habitat Conservation Plan (HCP) is adopted, comply with all of the Avoidance, Minimization, and Mitigation Measures listed in the Draft Solano HCP (see Appendix A for a list of the Avoidance and Minimization Measures that are applicable to Vacaville). In addition, require that development projects provide copies of required permits, or verifiable statements that permits are not required, from the California Department of Fish and Wildlife (2081 Individual Take Permit) and US Fish and Wildlife Service (Section 7 Take Authorization) prior to receiving grading permits or other approvals

that would permit land disturbing activities and conversion of habitats or impacts to protected species. In cases where environmental review indicates that such permits may not be required, the Community Development Director may establish time limits of not less than 45 days from the submission of an adequate request for concurrence response from an agency. If the agency has not responded, or requested a time extension of no more than 90 days to complete their assessment, within the established time frame, applicable grading permits or other authorizations may be provided, subject to other City requirements and review. However, the City's issuance of grading permits or other authorizations does not absolve the applicant's obligations to comply with all other State and federal laws and regulations.

Goal COS-2: Preserve and restore Vacaville's creeks.

- **Policy COS-P2.2:** Protect existing stream channels and riparian vegetation by requiring buffering or landscaped setbacks and storm runoff interception.
- **Policy COS-P2.3:** Require creekway and riparian area protection during construction, such as providing adequate setbacks from the creek bank and riparian areas, and creekway and riparian area restoration after construction.

Solano County General Plan

The Solano County General Plan was adopted in 2008 and acts as a guide for conservation and land development within the unincorporated areas of Solano County through 2030. Below are policies provided in Chapter 4 of the General Plan, which outline the strategies that are used to conserve the County's biological resources related to the Project:

- **RS.P-1:** Protect and enhance the county's natural habitats and diverse plant and animal communities, particularly occurrences of special-status species, wetlands, sensitive natural communities, and habitat connections. Actions to enhance or restore habitat areas should not cause adverse impacts to airports, including Travis Air Force Base.
- **RS.P-2:** Manage the habitat found in natural areas and ensure its ecological health and ability to sustain diverse flora and fauna.
- **RS.P-3:** Focus conservation and protection efforts on high-priority habitat areas depicted in Figure RS-1 (Solano County 2008).
- **RS.P-4:** Together with property owners and federal and state agencies, identify feasible and economically viable methods of protecting and enhancing natural habitats and biological resources.
- **RS.P-5:** Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations. Preserve contiguous habitat areas to increase habitat value and to lower land management costs.
- **RS.P-6:** Protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way.

5.12.6 Agencies and Agency Contact

Table 5.12-7 below lists the regulatory agency contacts for biological resources for this Project. The Applicant has coordinated with USFWS on vernal pool fairy shrimp to identify concerns and measures for avoidance, minimization, and mitigation. Meeting minutes from the coordination meeting with USFWS is included as Appendix M of the BRTS (Appendix Y).

Table 5.12-7 Agency Contacts for Biological Resources

Issue	Agency	Contact
State-listed species, CDFW-Jurisdictional features	CDFW, Region 3 - Bay Delta Region	Brenda Blinn, Senior Environmental Scientist (Supervisor) 2109 Arch Airport Road Stockton, California 95206 (208) 234-3420 Brenda.Blinn@wildlife.ca.gov
		Crystal Sinclair, Senior Environmental Scientist (Specialist) Crystal.Sinclair@wildlife.ca.gov; and Region 3 AskBDR@wildlife.ca.gov
Federally-listed species	USFWS, Sacramento Field Office	Megan Cook, Sacramento Division Supervisor 2800 Cottage Way Room W-2605 Sacramento, California 95825 (916) 414-6464 Megan_Cook@fws.gov
RWQCB-jurisdictional features	RWQCB, Region 2 - San Francisco Regional Water Quality Control Board	Stephanie Tadlock, Environmental Scientist (Senior) 1515 Clay St Oakland, California 94612(510) 622-2300 Stephanie.Tadlock@waterboards.ca.gov; and Region 2 rb2-sfbay-contactus@waterboards.ca.gov

5.12.7 Permits and Permit Schedule

The Applicant and CEC will collaborate with the City of Vacaville, Solano County, USFWS, and CDFW on review of this Opt-in Application to ensure compliance with applicable City of Vacaville, Solano County, RWQCB and CDFW requirements. Due to the exclusive jurisdiction of the CEC, no other biological resource permits are required for the Project.

5.12.8 References

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