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4.4 BIOLOGICAL RESOURCES

This section provides a biological resource evaluation for the proposed Corby Battery Energy Storage System Project (Project), in accordance with California Energy Commission (CEC) guidelines while simultaneously addressing considerations under the California Environmental Quality Act (CEQA). The Project will include a permanent operational facility, including the battery energy storage system (BESS) array, Project substation, associated equipment, roads, fencing, sound barrier, groundwater well, water tank, and stormwater retention basins which will be located on an approximately 40.3-acre parcel (Project site). Construction laydown areas will also be within the Project site. Energy will be transported from the Project substation to the nearby Pacific Gas and Electric (PG&E) Vaca-Dixon Substation through a 1.1-mile-long 230-kilovolt (kV) generation tie (gen-tie) line, portions of which would be installed overhead and underground, sited on a gen-tie corridor of approximately 19.4 acres. The underground portions of the gen-tie line will run east-west parallel to and crossing Kilkenny Road, either within acquired easements on adjacent parcels (Underground Route Option #1) or within the City of Vacaville road right-of-way (Underground Route Option #2). The overhead portions include two structures on the Project site, four structures between Kilkenny Road and Interstate (I)-80 on private land owned by the Applicant, and up to four structures north of I-80 on PG&E's Vaca-Dixon Substation property. A gen-tie laydown area of 7.2 acres will be located adjacent to the gen-tie corridor (Figure 1-3). The Project will include the construction of new telecommunications facilities within the Project site and along Kilkenny Road within the proposed gen-tie corridor outside of the Project site. The Project disturbance area, including the Project site, gen-tie corridor, and gen-tie laydown area will total approximately 65.9 acres.

The proposed Project facilities are located in Solano County, between the towns of Vacaville and Dixon, California, as illustrated in Figure 1-1. A Biological Resources Report was prepared for the proposed Project, which includes information on the biological resources in the Project vicinity; this includes descriptions of vegetation and land cover, natural communities, special status species with potential to occur in the Project vicinity, and associated figures. The Biological Resources Report is referenced in the sections below and included as Confidential Appendix 4.4-A.

4.4.1 California Environmental Quality Act Checklist

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
1.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?			X	
2.	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?				X

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.	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?				X
4.	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?				X
5.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
6.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	

4.4.2 Affected Environment[1, 2]

4.4.2.1 Regional Overview and General Habitat

The Project is located within the western portion of California's Central Valley within the Great Valley Ecoregion of California. This ecoregion is a broad, flat, alluvial plain about 50 miles wide and 400 miles long in the central part of California between the Sierra Nevada in the east and the Coast Range in the west. The Project site is located within the Sodic Claypan Terraces subsection of the Great Valley (Miles and Goudy 1997). This region has a typical Mediterranean climate with hot dry summers and cool wet winters. The average high temperatures range from 95.2 degrees Fahrenheit (°F) in July to 55.4 °F in January, and the average low temperatures range from 36.7 °F in December to 56.1 °F in July. The total average annual precipitation is 24.5 inches, occurring primarily between November and March (WRCC 2024).

The Project site, gen-tie corridor, and gen-tie laydown area are located within the Allendale 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 6 north, Range 1 east, and Section 6. Currently, the proposed Project site and gen-tie corridor are used as agricultural lands. The land surrounding the Project site is also in agricultural use. Project site elevation ranges from 75 feet to 77 feet above mean sea level with little to no microtopography. Soils within the Project disturbance area include (NRCS 2024):

- Capay clay, 0 percent slopes, Major Land Resource Area (MLRA) 17;
- Clear Lake clay, 0 to 2 percent slopes, MLRA 17;
- San Ysidro sandy loam, 0 to 2 percent slopes;
- Ysidro sandy loam, thick surface, 0 to 2 percent slopes;
- Water; and

[1] Appendix B (g) (1)
[2] Appendix B (g) (13) (A)

- Yolo loam, clay substratum.

4.4.2.2 Desktop Evaluation and Field Surveys[3,4]

A full description of database searches, surveys, and results is included in the Biological Resources Report (Confidential Appendix 4.4-A); a summary is provided below.

Desktop Evaluation

The following biological databases were queried for records of special status plants, natural communities, and wildlife that might have potential to occur in the Project vicinity.

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) search for documented occurrences within a 10-mile radius of the Project disturbance area (i.e., Project site, gen-tie corridor, and gen-tie laydown area) (CDFW 2024a);
- U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation System for the Project disturbance area (USFWS 2024a); and
- California Native Plant Species online Inventory of Rare and Endangered Vascular Plants of California for the Allendale (3812148) USGS 7.5-minute quadrangle, and the 13 surrounding quadrangles within 10 miles of the Project disturbance area, including Birds Landing (3812127), Denverton (3812128), Liberty Island (3812136), Dozier (3812137), Elmira (3812138), Sacon (3812146), Dixon (3812147), Merritt (3812157), Winters (3812158), Fairfield North (3812231), Mt. Vaca (3812241), and Monticello Dam (3812251) (CNPS 2024a).

Other information sources consulted to determine which special status species could potentially occur in the Project vicinity included:

- Natural Resources Conservation Service Web Soil Survey (NRCS 2024);
- USFWS National Wetland Inventory maps (USFWS 2024b);
- Sensitive Natural Community data queried within 10 miles of the Project disturbance area using the occurrence of Important Bird Areas, sensitive plant communities, and designated critical habitat (Audubon 2024; CNPS 2024a; USFWS 2024a);
- Wildlife movement and connectivity models in CDFW BIOS6 Viewer including the Habitat Connectivity Viewer and Ungulate Migration Viewer (CDFW 2024b); and
- Aerial imagery (Google 2024).

Figure 4.4-1~~Figure 4.4-1~~ and Figure 4.4-2~~Figure 4.4-2~~ portray the results of 10-mile radius CNDDB records searches for plants and wildlife. Confidential Appendices 4.4-B and 4.4-C portray the results of 3-mile radius CNDDB records searches for plants and wildlife. The scale of the confidential appendices was reduced to the scale as a standard USGS quadrant (1:24,000) rather than 1:6,000 to decrease the size of the map book while still clearly presenting CNDDB spatial data detail. Additionally, the radius was limited to 3 miles around the Project site because the potential impact to biological resources as

[3] Appendix B (g) (13) (A)
[4] Appendix B (g) (13) (D) (i) and (g) (13) (D) (ii)

a result of the Project would not extend beyond this 3-mile radius. Supplemental CNDDB mapping will be provided upon request.

Field Surveys

Multiple field surveys were conducted as described in Confidential Appendix 4.4-A, Biological Resources Report. These included a biological reconnaissance-level assessment, Swainson's hawk (*Buteo swainsoni*) nest survey, burrowing owl (*Athene cunicularia*) nest survey, and an aquatic resources delineation (Appendix 4.4-D). The survey area varied based on the biological resource and is further described in the subsections below. Not all of the survey area was able to be surveyed in the field due to inaccessible private property. However, the portions that were not surveyed were analyzed using aerial imagery and from adjacent accessible areas. Survey efforts are summarized in Table 4.4-1~~Table 4.4-1~~ and representative site photographs are available in Appendix C of the Biological Resources Report (Appendix 4.4-A). Survey methods are described below.

Table 4.4-1. Field Survey Types, Dates, and Personnel Involved

Survey Type	Date	Personnel
Reconnaissance-level survey	June 1, 2023	Rachel Bennett (ICF; biologist)
Swainson's hawk nest surveys	March 16, 2023; April 13, 2023; April 14, 2023; April 19, 2023; June 27, 2023; June 28, 2023; June 29, 2023	Ross Wilming (ICF; biologist)
Burrowing owl nest surveys	May 23, 2024; May 24, 2024; June 17, 2024; July 10, 2024; December 23, 2024; January 7, 2025; January 17; 2025; January 31; 2025; February 18, 2025	Kaitlin Kozlowski, Michael Scaffidi, Arin Phillips, and Austin Kozlowski (ICF; biologists)
Aquatic resources delineation surveys	June 1, 2023 (preliminary aquatic resource assessment); May 28, 2024 (formal aquatic delineation)	Rachel Bennett (ICF; biologist); Joe Sanders (ICF; wetland ecologist)

Reconnaissance Survey

Initial reconnaissance-level field surveys were conducted by ICF International Inc. (ICF) on June 1, 2023. The survey evaluated biological communities occurring onsite and biological information was collected including potential aquatic resources, vegetation communities, plant and wildlife species observed, and special habitat features to determine the potential for special status species that may occur within the Project disturbance area (Project site, gen-tie corridor, and gen-tie laydown area) plus a 250-foot buffer. Inaccessible areas were surveyed with the uses of binoculars.

The results of the reconnaissance-level field surveys were used to inform the subsequent surveys of the Project vicinity. Special status species occurrences during surveys are included in Section 4.4.2.3.

Swainson's Hawk Nest Surveys

Swainson's hawk surveys, which followed the recommendations outlined in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000), occurred on March 16, 2023 (Period I); April 13, 2023, April 14, 2023, and April 19, 2023 (Period III); and June 27 through June 29, 2023 (Period V). The survey area consisted of a 0.5-mile buffer of the Project site and gen-tie corridor. The majority of the surveys were conducted as windshield surveys; however, on-foot surveys were required at some locations where

vehicle access or parking was unavailable. Binoculars and a spotting scope were used to observe bird species, locate nests, and aid in the identification of wildlife species observed. Trees and nests were surveyed from multiple angles to increase the chance of detecting raptors or nests.

Burrowing Owl Nest Surveys

Burrowing owl nest surveys were conducted on May 23 and 24, 2024, June 17, 2024, ~~and~~ July 10, 2024, December 23, 2024, January 7, 2025, January 17, 2025, January 31, 2025, and February 18, 2025 in accordance with the 2012 *Staff Report on Burrowing Owl Mitigation* from the California Department of Fish and Game (CDFG 2012). The survey area consisted of a 500-foot buffer of the Project disturbance area. The surveys were conducted on foot with the aid of binoculars and a spotting scope. Where access was restricted due to private property, the survey was conducted from the roadside or adjacent parcels where access was provided.

During the surveys, biologists assessed the suitability of habitat within the survey area to support burrowing owl. In addition, any signs or observations of burrowing owls' presence, burrows of sufficient size for burrowing owl use, and any burrow surrogates (e.g., culverts or pipes large enough to allow owl use but small enough to exclude predators, rubble piles) were documented during the surveys, if present.

Aquatic Resources Delineation Surveys

A preliminary aquatic resource assessment was conducted as part of the reconnaissance-level survey conducted on June 1, 2023. Following the reconnaissance assessment, a formal aquatic resources delineation was conducted on May 28, 2024. The aquatic resources delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0, USACE 2008). Vascular plants were idented using the *Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) and nomenclature and associated wetland ratings followed the National Wetland Plant Lists (USACE 2022).

The survey area for the aquatic resource delineation included the Project disturbance area and a 250-foot buffer. A total of 2.96 acres (9,047 linear feet) of aquatic resources were delineated within the survey area consisting of four aquatic resource types and 17 individual aquatic features (Appendix A of Appendix 4.4-D). The four aquatic resource types include a basin, ditches, intermittent riverine, and seasonal wetlands. The acreage, linear feet, and proposed jurisdiction as they relate to waters of the United States (WOTUS), waters of the State, and California Fish and Game Code Section 1602 is included in Table 4.4-2. A description of each of the aquatic resource types is presented below. See Appendix 4.4-D for the Aquatic Resources Delineation Report[5], which includes detailed delineation methodology, results of the delineation, jurisdictional features, and representative photographs of the aquatic resources identified in the survey area.

[5] Appendix B (g) (13) (D) (ii)

Basin

There is one mapped basin in the survey area encompassing 0.020 acre. This feature occurs within the PG&E Vaca-Dixon Substation and was not observable during the aquatic resource delineation survey, and therefore, mapped using aerial imagery. This feature likely drains surface runoff from the substation and could regularly be maintained, and it appears to be excavated in uplands. This feature does not fit well within the Cowardin classification system (Cowardin et al. 1979).

Ditch

There are thirteen mapped ditches in the survey area encompassing 1.932 acres and extending 7,138 linear feet. Features outside of the PG&E Vaca-Dixon Substation were mapped based on the presence of an ordinary high-water mark and features within the substation were mapped remotely. These features either receive pumped water for irrigation purposes, drain impervious areas within the substation, or drain orchards. Mapped ditches vary in their bottom composition including both concrete-lined bottoms and soil bottoms. These features do not appear to be realigned natural features, are excavated in uplands and appear to be subject to regular maintenance. These features do not fit well within the Cowardin classification system (Cowardin et al. 1979).

Intermittent Riverine

There is one mapped intermittent riverine feature encompassing 0.932 acre and extending 1,909 linear feet that is a reach of Gibson Canyon Creek. This feature likely flows part of the year and dries up in the late summer. Low flows were observed during the May 28, 2024, survey. This feature appears to be subject to some maintenance as the banks are mostly straight and some of it is concrete lined, which indicates some realignment of this feature. This feature was mapped in the field based on the presence of an ordinary high-water mark. This feature could be classified as *riverine, intermittent* by the Cowardin classification system (Cowardin et al. 1979).

Seasonal Wetland

There are two mapped seasonal wetlands present in the survey area encompassing 0.076 acre. Both features occur on the PG&E Vaca-Dixon Substation property. Both features were dominated by hydrophytic vegetation including creeping wildrye (*Elymus triticoides*), curly dock (*Rumex crispus*), hyssop loosestrife (*Lythrum hyssopifolia*), and seaside barley (*Hordeum marinum*). Prevalent algal matting was observed within both mapped seasonal wetlands. These features were mapped based on the presence hydrophytic vegetation and primary hydrology indicators and were bounded by upland nonnative annual grassland. These features could be classified as *palustrine, emergent* by the Cowardin classification system (Cowardin et al. 1979).

Table 4.4-2. Aquatic Resources Delineation Results

Feature ID	Acres	Linear Feet	Proposed Jurisdiction
Basin			
B-1	0.020	N/A	Waters of the State
Basin Subtotal	*0.020*	N/A	N/A
Ditch			
D-2	0.123	370	Waters of the State; 1602
D-3	0.170	585	Waters of the State

Feature ID	Acres	Linear Feet	Proposed Jurisdiction
D-4	0.032	130	Waters of the State
D-5	0.427	1,243	Waters of the State
D-7	0.491	1,569	Waters of the State
D-8	0.316	1,133	Waters of the State
D-9	0.039	181	Waters of the State
D-10	0.022	152	Waters of the State; 1602
D-11	0.055	237	Waters of the State; 1602
D-12	0.042	160	Waters of the State; 1602
D-14	0.021	171	Waters of the State
D-15	0.096	1,013	Waters of the State
D-16	0.098	194	Waters of the State; 1602
Ditch Subtotal	*1.932*	*7,138*	N/A
Intermittent Riverine			
IR-1	0.932	1,909	Waters of the U.S.; Waters of the State; 1602
Intermittent Riverine Subtotal	0.932	1,909	N/A
Seasonal Wetland			
SW-1	0.042	N/A	Waters of the State
SW-2	0.034	N/A	Waters of the State
Seasonal Wetland Subtotal	*0.076*	N/A	N/A
Total Aquatic Features	**2.960**	**9,047**	N/A

1602 – California Fish and Game Code Section 1602

4.4.2.3 Terrestrial and Aquatic Biological Resources and Habitats in the Project Vicinity and at the Proposed Project Site[6,7,8]

Land cover types were recorded in the Project vicinity during the reconnaissance-level survey on June 1, 2023. The Project vicinity includes five upland land covers consisting of annual grasslands, fallow farmlands, nonnative forests, orchards, and developed or disturbed areas. The predominant land cover types in the Project vicinity are row crops and orchards. In addition, four types of aquatic features were mapped within the Project vicinity including, a basin, ditches, an intermittent riverine, and seasonal wetlands. A description of each of these landcovers is provided below.

Annual Grasslands

Annual grasslands occur in the vicinity of the PG&E Vaca-Dixon Substation and consist primarily of non-native grass species. The annual grasslands are dominated by non-native annual grasses and forbs including wild oats (*Avena* spp.), ripgut brome *(Bromus diandrus*), cheatgrass (*Bromus tectorum*) yellow star thistle (*Centaurea solstitialis*), radish (*Raphanus* sp.) and filarees (*Erodium* spp.).

[6] Appendix B (g) (13) (A) (i) through (g) (13) (A) (viii)
[7] Appendix B (g) (13) (B)
[8] Appendix B (g) (13) (C)

Fallow Farmlands

The entirety of the 40.3-acre Project site was composed of fallow farmland at the time of the reconnaissance-level survey in 2023. Fallow farmland is land that was not currently being used for crop cultivation in the current vegetation cycle. This area has historically been used in row crop rotations.

Non-Native Forests

The non-native forests are located along the gen-tie line, north of Interstate 80. This area was dominated by olive trees (*Olea europea*) and red gum (*Eucalyptus camaldulensis*) with oleander (*Nerium oleander*) and other non-native and ruderal plant species. This area occurs in the vicinity of the PG&E Vaca-Dixon Substation.

Orchard

Orchards (almond, cherry/plum) account for a large portion of the gen-tie corridor, where the gen-tie line will be constructed, and the gen-tie laydown area. There are orchards to the west and northwest of the 40.3-acre Project site.

Developed/Disturbed

Developed/disturbed areas within the Project vicinity include portions along the gen-tie corridor that intersect with Kilkenny Road, I-80, and the Vaca-Dixon Substation. Narrow margins along roads and fields where vegetation management and other reoccurring disturbance occurs were also considered developed/disturbed.

The proposed Project site and gen-tie corridor, including construction laydown areas, comprise agricultural lands consisting either of fallow farmlands or orchards. The 40.3-acre Project site will include permanent operational facility, including the BESS array, Project substation, associated equipment, roads, fencing, sound barrier, and stormwater ponds occurs in fallow farmland. The 19.4-acre gen-tie corridor occurs within the orchards. The 7.2-acre gen-tie laydown area will also occur within the orchards.

4.4.2.4 Special Status Species

Tables 4.4-3 and 4.4-4[9] list the special status species that have the potential to occur within one mile of the Project site and within 1,000 feet from the outer edge of linear facility corridors. Species assessed to have no potential for occurrence or as absent are not included below, for a complete list of species including those with no potential for occurrence, see Confidential Appendix 4.4-A. Each species was evaluated for its potential to occur through literature review and field observations and is categorized as defined below.

- **Low:** Species is not likely to occur because of marginal habitat quality, distance from known occurrences, and/or lack of recent occurrences within the Project vicinity.

[9] Appendix B (g) (13) (C) (i)

- **Moderate:** Some or all of the species' life history requirements are provided by habitat in the Project vicinity; populations may not be known to occur in the Project vicinity but are known to occur in the region.
- **High/Present:** All of the species' life history requirements can be met by habitat present in the Project disturbance area, populations are known to occur in the Project disturbance area or immediate vicinity, and/or species was observed during surveys in the Project vicinity.

Special Status Plants

The special status plant species identified in the records search and its potential for occurrence within one mile of the Project site and within 1,000 feet from the outer edge of linear facility corridors based on the habitat present and surveys is summarized in Table 4.4-3Table. The vast majority of the Project site provides low-quality habitat for special status plant species due to the high level of disturbances associated with agricultural activity. No special status plant species were observed during the 2023 or 2024 field surveys. A full list of the plant species observed during the 2023 and 2024 field surveys is provided in Confidential Appendix 4.4-A. Figure 4.4-1~~Figure 4.4-1~~ displays the results of the 10-mile radius CNDDB plant records search, and Confidential Appendix 4.4-B displays these results within a 3-mile radius of the Project site (CDFW 2024a).

Table 4.4-3. Special Status Plant Species with Potential to Occur

Plant Family: Scientific Name/ Common Name	Status[1/]			Habitat / Typical Elevation (feet [ft])	Blooming Period	Potential for Occurrence within 1 mile of the Project site and 1,000 feet from outer edge of linear facility corridors
	Federal	State	CNPS			
Limosella australis / Delta mudwort	-	-	2B.1	Occurs usually in streambanks or mud banks, freshwater or brackish marshes and swamps, and riparian scrub. Below 10 ft.	May to August	Low: This species has a low potential to occur within the marginal habitat in Gibson Canyon Creek. There are no CNDDB occurrences within 10 miles of the Project site.

CNDDB – California Natural Diversity Database; CNPS – California Native Plant Society
1/ Status designations are as follows:
CNPS California Rare Plant Rank (CRPR):
(2B) Rare, threatened, or endangered in California but common elsewhere
Threat Rank:
0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

Sources: CDFW 2024a; CNPS 2024a

Figure 4.4-1. CNDDB Special Status Plants within a 10-mile Radius of the Project Site (scale 1:350,000)

Special Status Wildlife

The Project disturbance area may support an assortment of wildlife species and may provide shelter, foraging, nesting, roosting, and breeding habitat should species occur in the vicinity. However, due to lack of complex vegetation communities within the Project disturbance area and regular disturbances associated with agricultural practices in the Project vicinity, the wildlife habitat suitability in the vicinity of the Project site can be considered low.

During the field surveys, two special status bird species were observed within the 0.5-mile Swainson's hawk survey buffer, including Swainson's hawk, a state threatened species, and white-tailed kite (*Elanus leucurus*), a California Fully Protected species. In addition, habitat surrounding the vicinity of the Project may also support habitat for several special status species including the following: Crotch's bumble bee (*Bombus crotchii*), a state candidate species; monarch butterfly (*Danaus plexippus*), federal candidate species; western pond turtle (*Actinemys marmorata*), a federal candidate species and CDFW Species of Special Concern (SSC); grasshopper sparrow (*Ammodramus savannarum*), a CDFW SSC; burrowing owl, a state candidate species and CDFW SSC; golden eagle (*Aquila chrysaetos*), a California Fully Protected and Watch List species; northern harrier (*Circus cyaneus*), a CDFW SSC; bald eagle (*Haliaeetus leucocephalus*), a state endangered and California Fully Protected species; and western red bat (*Lasiurus blosseevilli*), a CDFW SSC. A full list of wildlife species observed during the field surveys provided in Confidential Appendix 4.4-A.

These special status wildlife species observed during the field surveys and those with the potential to occur in the within one mile of the Project site and within 1,000 feet from the outer edge of linear facility corridors based on the habitat present and surveys are summarized in Table 4.4-4

Table. The results of a 10-mile radius CNDDB wildlife records search is included in Figure 4.4-2. Confidential Appendix 4.4-C displays these results within a 3-mile radius of the Project site (CDFW 2024a).

Table 4.4-4. Special Status Wildlife Species with Potential to Occur

Scientific Name / Common Name	Status[1/]		Typical Habitat	Potential for Occurrence within 1 mile of the Project site and 1,000 feet from outer edge of linear facility corridors
	Federal	State		
Invertebrates				
Bombus crotchii / Crotch's bumble bee	-	CE/SSC	Found in open grasslands and scrub. Nest underground in abandoned rodent burrows. Individuals forage on milkweed, pincushion (*Chaenactis* sp.), lupine (*Lupinus* sp.), bur clover (*Medicago* sp.), phacelia (*Phacelia* sp.), and sage (*Salvia* sp.).	Low. There is a low potential for this species to occur. No common foraging plants were found within the Project site during the field surveys; however, the Project site is within the range of this species. There is one CNDDB occurrences within 10 miles of the Project site.

Scientific Name / Common Name	Status[1/]		Typical Habitat	Potential for Occurrence within 1 mile of the Project site and 1,000 feet from outer edge of linear facility corridors
	Federal	State		
Danaus plexippus / Monarch butterfly	FC	-	Open habitats including fields, meadows, weedy areas, marshes, and roadsides. Monarch butterflies roost in wind-protected tree groves (such as eucalyptus) with nectar and water sources nearby. Caterpillar host plants are native milkweeds (*Asclepias* spp.).	Low. There is a low potential for this species to forage and migrate through the site vicinity. No milkweed host plants were observed during the field surveys. There are no CNDDB occurrences within 10 miles of the Project site.
Reptiles				
Actinemys marmorata / western pond turtle	PT	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, canals, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.	Low. There is a low potential for this species to occur as Gibson Canyon Creek is the only suitable aquatic habitat present nearby; however, the banks of the creek are likely too steep for use by pond turtles. Suitable upland habitat is present within the area. There are 17 CNDDB occurrences within 10 miles of the Project site, with the closest occurrence located approximately 1.6 miles to the southwest.
Birds				
Ammodramus savannarum / grasshopper sparrow	-	SSC	Occurs in short to medium height dry grasslands with scattered shrubs in the Central Valley, Sierran foothills, and south coast. Found in prairies and pastures in largely forest areas along the north coast. Nests on the ground in grass or at the base of shrubs.	Low. There is a low potential for this species to occur. The Project vicinity has marginal habitat for this species. There are two CNDDB occurrences within 10 miles of the Project site.
Athene cunicularia / burrowing owl	-	CE	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation with available burrows.	Moderate. There is a moderate potential for this species to occur. This species is known to occur in the vicinity and there are some suitable nesting and foraging habitats present within the vicinity of the Project site; however, no burrowing owls were detected during the 2024 and 2025 surveys. There are 88 CNDDB occurrences within 10 miles of the Project site, with the closest occurrence located approximately 1 mile northeast.
Aquila chrysaetos / golden eagle	BGEPA	FP / WL	Rolling foothills, mountain areas, sage-juniper flats, and desert that provide abundant prey. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Low. There is a low potential for this species to occur. Marginal foraging habitat is present within the Project vicinity, although no suitable nesting habitat is present. Potential presence is anticipated to be limited to rare flyovers of the Project site. There are no CNDDB occurrences within 10 miles of the Project site.
Buteo swainsoni / Swainson's hawk	-	T	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands or alfalfa or grain fields supporting rodent populations.	Present. There is a high potential for this species to occur and this species was observed during field surveys. Two pairs of Swainson's hawk were observed with active nests in the vicinity of PG&E Vaca-Dixon Substation. In addition, suitable foraging and nesting habitat is present in the Project Vicinity. There are 200 CNDDB occurrences within 10 miles of the Project site, with over 10 occurrence located within 1 mile.
Circus cyaneus / Northern harrier	-	SSC	Coastal salt and freshwater marshes; nesting and foraging habitats in grasslands and agricultural fields.	Low. There is a low potential for this species to occur. Suitable foraging and nesting habitats are present within the Project vicinity. There are two CNDDB occurrences within 10 miles of the Project site.

Scientific Name / Common Name	Status[1/]		Typical Habitat	Potential for Occurrence within 1 mile of the Project site and 1,000 feet from outer edge of linear facility corridors
	Federal	State		
Elanus leucurus / white-tailed kite	-	FP	Rolling foothills or valley areas with scattered oaks and river bottomlands or marshes near open grasslands for foraging.	Present. There is a high potential for this species to occur and this species was observed during field surveys. Suitable foraging lands within the grasslands and agricultural areas and large trees for nesting is present within the vicinity of the Project site. There are five CNDDB occurrences within 10 miles of the Project site with the closest occurrence approximately 0.9 mile to the southwest.
Haliaeetus leucocephalus / bald eagle	BGEPA	E / FP	Requires large bodies of water with an abundant fish population. Feeds on fish, carrion, small mammals, and waterfowl. Nests are usually located within a 1-mile radius of water. Nests are most often situated in large trees with a commanding view of the area.	Low. There is a low potential for this species to occur. No suitable foraging and nesting habitats are present within the Project vicinity. Potential presence is anticipated to be limited to rare flyovers of the Project site. There is one CNDDB occurrence within 10 miles of the Project site.
Mammals				
Lasiurus blosseevilli / Western red bat	-	SSC	Found primarily in riparian and wooded habitats; occurs at least seasonally in urban areas; day roosts within foliage of trees; found in fruit orchards and sycamore riparian habitats in the Central Valley.	Low. There is a low potential for this species to occur. The orchards surrounding the Project site may provide suitable roosting habitat. There is one CNDDB occurrences within 10 miles of the Project site.

CNDDB – California Natural Diversity Database

1/ Status designations are as follows:
Federal Designations:
(FC) Federal Candidate, (PT) Proposed Threatened; (BGEPA) Bald and Golden Eagle Protection Act
State Designations:
(E) State Endangered, (T) State Threatened, (CE) Candidate Endangered, (SSC) Species of Special Concern, (FP) Fully Protected, (WL) Watch List

Sources: CDFW 2024a; USFWS 2024a

Figure 4.4-2. CNDDB Special Status Wildlife within a 10-mile Radius of the Project Site (scale 1:350,000)

4.4.3 Environmental Analysis[10, 11]

This section summarizes the potential direct and indirect impacts on biological resources to determine the permanent and temporary effects of construction and operation of the proposed Project. Impacts to protected species will be minimized or avoided by the Project Design (PD) Measures described in Section 4.4.5.

4.4.3.1 Temporary Impacts

Temporary impacts are those that will be restored following construction and will have reversible effects on biological resources. This type of impact includes the temporary loss of potentially suitable habitat from clearing and grubbing, the installation of a temporary laydown area, grading beyond the perimeter of the permanent Project features. Temporary construction laydown areas will be used for construction trailers, employee parking, laydown, staging, and storage of construction materials, and will be located within the 40.3-acre Project site and an additional gen-tie laydown area will be located west of the overhead portion of the gen-tie line, within an Applicant-owned parcel on 7.2-acres of land. The Project will result in a total disturbance area of approximately 65.9 acres, of which only approximately 28.4 acres of potentially suitable habitat will be temporarily disturbed as a result of the Project. The 28.4 acres of temporary impacts will occur within the 40.3-acre Project site and PG&E Vaca-Dixon Substation parcel, and will be limited to areas of non-permanent structures such as the construction laydown areas and PG&E parcel. These areas will be temporarily impacted and revegetated following construction completion. With the implementation of the PD Measures outlined in Section 4.4.5, no significant impact will result from Project activities and no further mitigation is required.

4.4.3.2 Permanent Impacts

Permanent impacts are those that will not be restored after construction and will result in the irreversible removal of biological resources during the life of the Project. This type of impact will include the loss of potentially suitable habitat from the installation of the BESS equipment, Project substation, access roads, fencing, stormwater ponds, and sound barrier. In addition, clearing of the orchard within the gen-tie corridor and gen-tie laydown area will result in permanent habitat modifications. The Project will result in a total of approximately 15.9 acres of permanent disturbance to the 40.3-acre Project site through installation of the BESS equipment, Project substation, access roads, and stormwater ponds. In addition, the gen-tie corridor and gen-tie laydown area will result in the permanent clearing of up to 21.6 acres of orchard lands, which will result in a net benefit of suitable habitat lands for the majority of special status and common species which occur in the Project vicinity. With the implementation of the PD Measures outlined in Section 4.4.5, and a net gain of beneficial habitat lands as a result of construction activities, no significant impact will result from Project activities and no further mitigation is required.

[10] Appendix B (g) (1)
[11] Appendix B (g) (13) (E) and (g) (13) (E) (i)

4.4.3.3 Direct Impacts

Direct impacts are those that are caused by the Project action, occur at the same time and place, and include temporary and permanent impacts. Preparation and construction activities within the Project disturbance area (Project site, gen-tie corridor, and gen-tie laydown area) will result in temporary and permanent disturbance, which may provide suitable habitat for some special status species or their prey. Direct impacts on special status species could result in direct mortality, injury, or harassment of individuals through construction activities such as strikes from moving vehicles or heavy equipment, movement of construction materials, burrow collapse associated with earthwork, excavation or grading, placement of spoils and/or fill materials, and through vegetation clearing activities. Trash left at the Project site by construction workers could also attract predators, such as ravens and coyotes, resulting in increased chances for injuries or mortality.

Direct impacts during operations and maintenance will be very minimal, as BESS operations include minimal onsite activity; the facility will be unstaffed and will require infrequent vehicle usage for operations and maintenance.

With the implementation of the PD Measures outlined in Section 4.4.5, no significant impact will result from Project activities and no further mitigation is required.

4.4.3.4 Indirect Impacts

Indirect impacts are those that are caused by or result from the proposed action and are later in time, but reasonably certain to occur. In contrast to direct impacts, indirect impacts are subtler and could affect individuals and populations and habitat quality over an extended period of time, long after construction activities have been completed.

The results of preparation, construction, and operation activities may lead to indirect impacts. Additional use of roadways surrounding the Project vicinity during construction and operation increases the likelihood of collisions between vehicles and special status species trying to cross the road. An increase in human activity could result in an increase in food or trash left behind, which could attract predators. In addition, materials and equipment left behind following construction activities could entrap or entangle special status species, attract predators, or provide shelter for native species, which when removed could result in displacement or injury of the species. Facility noise and lighting may also attract or deter certain species from the Project vicinity.

Facility infrastructure could provide perching opportunities for ravens and raptors, and natural predation rates could be altered or increased when natural habitats are disturbed or modified.

With the implementation of the PD Measures outlined in Section 4.4.5, no significant impact will result from Project activities and no further mitigation is required.

4.4.3.5 Impacts to Special Status Plant Species

No special status plant species were observed during the 2023 reconnaissance-level field survey for the Project. Only one special status plant species has the potential to occur within the Project vicinity (Table 4.4-3). It is highly unlikely that any special status plant species will occur within the Project

disturbance area due to the historical disturbances associated with agricultural production, and the habitat where the species is found.

Delta Mudwort

Species Description

The Delta mudwort (*Limosella australis*) is a California Rare Plant Rank (CRPR) 2B.1 species. This species does not hold a listing status under the California Endangered Species Act (ESA)or federal ESA. A CRPR 2B.1 species is considered rare, threatened, or endangered in California but common elsewhere and seriously threatened in California. The Delta mudwort is a perennial stoloniferous herb which blooms from May to August (CNPS 2024b). This species usually occurs on mud banks in streambanks, marshes and swamps or riparian scrub, up to an elevation of 10 feet above sea level (CNPS 2024b).

Occurrence in the Project Vicinity

There are no CNDDB recorded occurrences within 10 miles of the Project site.

Habitat Suitability

Gibson Canyon Creek is the only location that may provide marginal habitat for this species. This species is known to occur up to elevations of approximately 10 feet above mean sea level; however, the reach of Gibson Canyon Creek within the Project disturbance area is approximately 75 feet above mean sea level. For this reason, limited suitable habitat is present in the Project vicinity for Delta mudwort and the potential for this species to occur is considered low.

Potential for Adverse Effects

During construction and operations, the Project will avoid all impacts to Gibson Canyon Creek. For this reason, there will be no impacts to Delta mudwort.

4.4.3.6 Impacts to Special Status Wildlife Species[12]

As outlined in

Table 4.4-4~~Table 4.4-4~~, numerous special status wildlife species have the potential to occur in the Project vicinity and could be impacted by the proposed Project. These species are discussed in detail in the following sections, including observations during biological surveys and the potential for adverse effects from Project activities.

Crotch's Bumble Bee

The Applicant is proposing PD Measures to ensure that take, as defined by the California Fish and Game Code, of Crotch's bumble bee will not occur as a result of Project activities. Under the California Fish and Game Code, "take" means to hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill (California Fish and Game Code Section 86). As such, the Applicant is not requesting an Incidental Take Permit (ITP) for Crotch's bumble bee, as take of this species will not occur with implementation of the PD Measures, as described below.

[12] Appendix B (g) (13) (E)

Species Description

Crotch's bumble bee is a state candidate endangered species. The historic range of Crotch's bumble bee extends from central California south to Mexico and includes coastal areas east to the edges of the deserts and the Central Valley, but typically excludes mountainous areas of California (Thorp et al. 1983; Williams et al. 2014). These social insects live in colonies composed of a queen, workers, and reproductive (males and new queens) (Hatfield et al. 2015). This species has a colonial life cycle, meaning the colonies are annual and only the new, mated queens overwinter. Crotch's bumble bees are active from February through October (CDFW 2023). Queen bees emerge from overwintering in late February, peaking in April, with a second pulse in July and ending in later October. From late March through September the colony, consisting of males and worker bees, remains active (The Xerces Society et al. 2018, CDFW 2023).

Little is known about the specifics of Crotch's bumble bee, but like all bumble bees there are three basic habitat requirements: suitable overwintering sites for the queens, suitable nesting sites for the colonies, and available floral resources for the duration of the colony (The Xerces Society et al. 2018).

Bumble bee species overwinter in soft, disturbed soil or under debris such as leaf litter (CDFW 2023). In early spring, after overwintering, the queen bee emerges and begins foraging and searching for a suitable colony nesting site. Crotch's bumble bees do not dig or make their own nests, but primarily nests underground in abandoned small mammal burrows, downed debris such as woody cover, brush piles, or fallen logs and human-made structures such as rock walls may also be used (CDFW 2023, Williams et al. 2014). Crotch's bumble bee is a foraging generalist that feed on a variety of widely distributed plant genera, including sages (*Salvia* spp.), lupines (*Lupinus* spp.), medics (*Medicago* spp.), phacelias (*Phacelia* spp.), and milkweeds (*Asclepias* spp.) (Koch et al. 2012; Williams et al. 2014).

Occurrence in the Project Vicinity

There is one documented occurrences of Crotch's bumble bee within a 10-mile radius of the Project site (Figure 4.4-2). This documented occurrence, recorded in 2007, is located approximately 6.3 miles southwest of the Project (CDFW 2024a). In addition, iNaturalist has a record of eight "research grade[13]" occurrences within Solano County from 2022 to the present (iNaturalist 2024).

Habitat Suitability

Bumble bees depend on the availability of habitat that supplies a rich diversity of floral resources during the colony's lifetime. The Project disturbance area primarily consists of agricultural or developed lands and lacks floral diversity and common floral resources such as milkweed, lupine, phacelia, and sage that may be used by Crotch's bumble bee. The lack of habitat diversity surrounding the Project disturbance area decreases the likelihood of nesting and overwintering success of bumble bee colonies (The Xerces Society et al. 2018). In addition, near-surface disturbances associated with the land covers surrounding the Project area such as mowing, tilling, planting, and grazing negatively affect bumble bee colonies (The Xerces Society et al. 2018).

[13] "Research grade" observations have media, location, a date, and a community consensus on a precise identification (usually at species-level)

While the Project area is within the range of Crotch's bumble bee and small mammal burrows were observed onsite, the disturbances associated with agricultural practices and lack of floral resources in the vicinity of the Project area may preclude this species from the area. For this reason, the habitat suitability in the Project disturbance area is considered to be low.

Potential for Adverse Effects

Construction activities such as grading, excavation, or stockpiling of soil could alter potentially suitable Crotch's bumble bee habitat but are not anticipated to impact individual bumble bees or nests. There has been no evidence of Crotch's bumble bee activity observed on the Project site and with the implementation of PD Measure **PD BIO-4**, which includes preconstruction surveys and avoidance of any active Crotch's bumble bee nest, there are no anticipated impacts to individual bumble bees or their nest.

The Project will result in up to 65.9 acres of disturbance resulting from construction of the Project site, clearance of the gen-tie corridor, and use of the gen-tie laydown area. Construction of the 40.3-acre Project site, 19.4-acre gen-tie corridor, and 7.2-acre gen-tie laydown area will result in both permanent and temporary impacts to low-quality habitat that may provide foraging, nesting, and estivation habitat for Crotch's bumble bee. The 40.3-acre Project site will result in the loss of fallow farmlands that may provide floral resources and potential nesting and estivation opportunities for this species. Permanently disturbed areas include the BESS array, Project substation, access and maintenance roads, perimeter fences, and the sound barrier will result in 15.9 acres of permanently disturbed habitat. Temporary habitat disturbance resulting from the laydown areas and non-permanent activities within the Project site and potentially suitable habitat areas within the gen-tie corridor include 28.4 acres and will be short term and will be reseeded and restored to functional habitat following construction activities.

Construction within the gen-tie corridor and gen-tie laydown will result in the permanent removal of 21.6 acres of orchards and minor impacts to developed and disturbed areas in the vicinity of the PG&E substation. The removal of the 21.6 acres of orchards and subsequent restoration of the gen-tie corridor and gen-tie laydown area will convert unsuitable orchard habitat to potentially suitable habitat. While construction within the 40.3-acre Project site will permanently remove 15.9 acres of potentially suitable habitat, conversion of the orchard lands will enhance 21.6 acres of orchard lands, resulting in a net benefit and additional 5.7 acres of habitat that may be used by Crotch's bumble bee should they occur in the Project vicinity in the future.

During the operation and maintenance phase of the Project, access to the facility will occur via the improved surface roads and is expected to be minimal and infrequent. The Project will not create any additional barriers to dispersal for Crotch's bumble bee, as they can fly over the facility. Thus, no impacts to this species are anticipated during the operations and maintenance phase of the Project.

The Project will result in additional habitat that may be utilized by Crotch's bumble bee in the future and, with the implementation of the PD Measures (**PD BIO-1** and **PD BIO-4**) outlined in Section 4.4.5 that aim to avoid or minimize impacts to individuals of this species, the Project will result in a less than significant impact to Crotch's bumble bee.

Monarch Butterfly

Species Description

The monarch butterfly is a candidate for listing under the federal ESA. Monarchs use numerous habitat types, providing milkweed and nectar are readily available. They have been documented in emergent and scrub-shrub wetlands, croplands, hedgerows, grasslands and old fields, dunes, savannas, suburban yards, roadsides, and open woodlands. Adult monarchs are opportunistic nectarivores and will feed seasonally on available floral resources. Monarchs lay eggs on, and the larvae feed only on, plants in the milkweed family, primarily those in the genus *Asclepias* (Zalucki and Brower 1992). Monarch butterflies overwinter in coastal California where suitable microclimate conditions are found. In California, monarchs roost in wind-protected tree groves usually consisting of nonnative blue gum eucalyptus (*Eucalyptus globulus*) and native Monterey pine (*Pinus radiata*) and Monterey cypress (*Cupressus macrocarpa*). They may also roost in nonnative red gum eucalyptus (*Eucalyptus camadulensis*), or native western sycamore (Platanus racemose), coast redwood (*Sequoia semperviren*) or coast live oak (*Quercus agrifolia*) (Xerces Society 2016).

Occurrence in the Project Vicinity

There are no recorded CNDDB occurrences of monarch butterflies within 10 miles of the Project site.

Habitat Suitability

Larval host plants (i.e., milkweed) were not observed during the 2023 or 2024 field surveys and no roosting habitat is available in the Project vicinity. However, monarch butterflies are foraging generalist and may forage on available flowering plants in the vicinity of the Project site. Due to the lack of floral diversity within the Project disturbance area, the potential for monarch butterfly to occur is considered low.

Potential for Adverse Effects

Construction activities such as grading, excavation, or stockpiling of soil could fill, remove, or otherwise alter foraging habitat but are not anticipated to impact individual butterflies. Larval host plants and suitable roosting habitat are not present onsite. As such, there will be no impacts to these monarch butterfly resources. The potential for adverse impacts will be similar in nature for those described above for Crotch's bumble bee, which includes 15.9 acres of permanent disturbance and 28.4 acres of temporary disturbance to potentially suitable low-quality foraging habitat within the Project disturbance area.

Similarly, the Project will result in orchard removal and subsequent restoration of the gen-tie corridor and gen-tie laydown area, which will convert 21.6 acres of unsuitable orchard habitat to potentially suitable foraging habitat for monarch butterfly. This will result in a net benefit and additional 5.7 acres of habitat that may be used by monarch butterfly should they occur in the Project vicinity in the future.

During the operation and maintenance phase of the Project, access to the facility will occur via the improved surface roads and is expected to be minimal and infrequent. The Project will not create any

additional dispersal barriers to dispersal. Thus, no impacts to this species are anticipated during the operations and maintenance phase of the Project.

With implementation of the PD Measures (**PD BIO-1**) outlined in Section 4.4.5 and the beneficial increase in habitat during construction, impacts to individuals of this species will be reduced to less than significant.

Western Pond Turtle

Species Description

The western pond turtle is a federally proposed threatened species and CDFW SSC that occurs in a variety of permanent and intermittent aquatic habitats, such as ponds, marshes, rivers, streams, and ephemeral pools. Pond turtles require suitable basking and haul-out sites, such as emergent rocks or floating logs, which they use to regulate their temperature throughout the day (Holland 1994). This species may winter in an inactive state on land or in the water, or they may remain active and in the water throughout the year (Jennings and Hayes 1994). Western pond turtle has been documented hibernating underwater in mud, immediately adjacent to a watercourse, or as far as 1,150 feet from a watercourse (Jennings and Hayes 1994). Upland hibernacula may include any type of crack, hole, or object that a turtle seeking cover might squeeze into or burrow underneath. In addition to appropriate aquatic habitat, western pond turtle requires terrestrial habitat suitable for nesting. Nests are typically created in grassy open fields with soils that are high in clay or silt fraction. Egg laying usually occurs between March and August. The upland oviposition site is often within approximately 650 feet of aquatic habitat. but may be as far as 1,500 feet from water (Holland 1994; Jennings and Hayes 1994).

Occurrence in the Project Vicinity

Western pond turtle is known to occur in the Project vicinity and there are 17 occurrences within 10 miles of the Project site (Figure 4.4-2). The nearest record, recorded in 2016, is located approximately 1.5 miles southwest of the Project site, recorded in 2016 (CDFW 2024a). This occurrence documented one adult and one subadult western pond turtle in a flood control channel that was partly concrete and riprapped-lined and partly grass-lined.

Habitat Suitability

The majority of the aquatic features onsite provide marginal habitat for western pond turtle; however, Gibson Canyon Creek may provide suitable habitat for this species when water is present. The agricultural and developed areas of the Project vicinity do not provide suitable upland habitat for western pond turtles, although the annual grasslands occurring near the PG&E Vaca-Dixon Substation may provide dispersal and nesting habitat for western pond turtle.

Potential for Adverse Effects

During construction, the Project will avoid all impacts to Gibson Canyon Creek and the aquatic features identified during the aquatic resource delineation. Similarly, during operations and maintenance, no impacts to aquatic features are anticipated. Project construction will occur on agricultural areas (i.e., fallow farmlands and orchards). These areas are not considered suitable

habitat and this species is unlikely to occur in those areas and, with the implementation of the PD Measures (**PD BIO-1**) outlined in Section 4.4.5, the impacts to this species would be considered less than significant.

Grasshopper Sparrow

Species Description

The grasshopper sparrow is a CDFW SSC and is also protected by the Migratory Bird Treaty Act (MBTA). Grasshopper sparrows in California occur west of the Sierra Nevada and are primarily summer residents, from Mendocino, Tehama, and Trinity Counties in the north, to western Riverside and San Diego Counties in the south (Shuford and Gardali 2008). Throughout their range, grasshopper sparrows occupy sites with moderately open grasslands containing patches of bare ground and that do not form contiguous thickets of shrubs (Shuford and Gardali 2008). Grasshopper sparrows prefer territories with some bare ground but rarely occupy sites with greater than 35 percent bare ground. These sparrows forage primarily on the ground or from low vegetation. This species nests on the ground, often at the base of grass clumps (Shuford and Gardali 2008).

Occurrence in the Project Vicinity

There are two CNDDB occurrences of grasshopper sparrow within 10 miles of the Project site, with the closest occurrence located approximately 5.5 miles southeast of the Project site (Figure 4.4-2; CDFW 2024a).

Habitat Suitability

Grasslands and agricultural lands surrounding the Project vicinity may provide marginally suitable habitat foraging or nesting habitats for this species.

Potential for Adverse Effects

The Project will result in up to 65.9 acres of disturbance resulting from construction of the 40.3-acre Project site, 19.4-acre gen-tie corridor, and 7.2-acre gen-tie laydown area. The 40.3-acre Project site will result in 15.9 acres of permanent impacts and 28.4 acres of temporary impacts to fallow farmlands that provide potential foraging and nesting habitat for grasshopper sparrows. The temporarily disturbed areas, which include laydown yards and non-permanent structures, will be revegetated and restored to functional habitat following construction. Impacts to potential foraging and nesting habitat for the grasshopper sparrow that could occur as a result of the Project are minor because of the limited impact areas and relative abundance of suitable habitat in the Project vicinity.

Construction within the gen-tie corridor and gen-tie laydown area will result in the permanent removal of 21.6 acres of orchards and minor impacts to developed and disturbed areas adjacent to the PG&E Vaca-Dixon Substation, which are not considered suitable habitat for the grasshopper sparrow. Following the permanent removal of the orchards, this area may be used as foraging and potentially nesting habitat for grasshopper sparrows should they occur in the vicinity of the Project area.

Construction activities such as excavation, grading, or stockpiling of soil may deter individuals from foraging in the immediate vicinity of the Project area but is not anticipated to result in additional impacts with the implementation of the proposed PD Measures outlined in Section 4.4.5.

During the operation and maintenance phase of the Project, access to the facility will occur via the improved-surface roads and is expected to be minimal and infrequent. Similarly, access to the gen-tie corridor will be infrequent. If this species forages within the Project area during the operational phase of the Project, it is unlikely that adverse impacts will occur resulting from the infrequent site visits because the maintenance activities are not expected to substantially exceed the baseline activity or disturbance level of the area. Thus, no impacts to this species are anticipated during the operations and maintenance phase of the Project.

With the implementation of the proposed PD Measures (**PD BIO-1** through **PD BIO-3**) outlined in Section 4.4.5, the restoration of temporarily disturbed areas, and the net increase in potential foraging and nesting habitat as a result of Project construction, the Project is anticipated to have a less than significant impact on the grasshopper sparrow.

Burrowing Owl

The Applicant is proposing PD Measures to ensure that take, as defined by the California Fish and Game Code, of burrowing owl will not occur as a result of Project activities. Under the California Fish and Game Code, "take" means to hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill (California Fish and Game Code Section 86). As such, the Applicant is not requesting an Incidental Take Permit (ITP) for burrowing owl, as take of this species will not occur with implementation of the PD Measures, as described below.

Species Description

The burrowing owl is a state candidate species and is protected under the MBTA. The burrowing owl is found throughout California, and uses a variety of habitat types characterized by low growing vegetation and the presence of mammal burrows or burrow-like structures. Burrowing owls occur in grasslands, deserts, prairies, and shrubland environments, but are also known to persist in some landscapes that are highly altered by human activity such as agricultural fields, roadsides, airports, golf courses, rural parks, and ruderal grassy fields (Haug et al. 1993; Rosenberg and Haley 2004). Burrowing owls' nest and roost in burrows commonly dug by ground squirrels and other small burrowing mammals or burrow-like structures such as culverts, piles of rubble, and pipes (Trulio 1997; Ronan 2002). In California, breeding burrowing owls are predominantly nonmigratory. Winter immigration of burrowing owls into California occur from the northern portion of the range in Canada and the United States, but these owls generally depart before the breeding season (Trulio et al. 2024).

Occurrence in the Project Vicinity

Solano County is within the range of burrowing owls and in a survey conducted during 2006-2007 during the breading season, over 80 pairs of burrowing owls were observed in the lowland areas of Solano County (Center for Biological Diversity 2024). Historical records from CNDDB indicate a total of

88 occurrences of burrowing owl within 10 miles of the Project site, with the nearest occurrence approximately 1 mile northeast of the Project site (CDFW 2024a).

Burrowing owl nest surveys were conducted between May 23, 2024, ~~and~~ July 10, 2024, December 23, 2024, January 7, 2025, January 17, 2025, January 31, 2025, and February 18, 2025 in accordance with the California Department of Fish and Game *Staff Report on Burrowing Owl Mitigation* (2012). The surveys did not document the presence of burrowing owl in the survey area; however, one burrowing owl was incidentally observed in 2023 during the Project's Swainson's hawk nest surveys approximately 0.5 mile northeast of the Project site. No suitable or occupied burrows or burrow surrogates of sufficient size or burrowing owls were observed within the survey area during any of the 2024-2025 non-breeding season surveys and 2025 breeding season surveys.

Habitat Suitability

The Project site and surroundings provide suitable foraging habitat for burrowing owl. During the burrowing owl nest surveys, biologists also noted unique features such as mounded banks of agricultural ditches, California ground squirrel burrows, and piles of discarded concrete pipes within the Project site which may provide suitable nesting or overwintering habitat for burrowing owl. Although no burrowing owls were observed during surveys in 2024, based on the presence of suitable nesting and forging habitat, and known occupancy in the region surrounding the Project, burrowing owl are considered to have a moderate potential to occur in the Project disturbance area in the future.

Potential for Adverse Effects

During construction, activities such as vegetation removal, grading, or excavations will alter potentially suitable habitat for burrowing owl resulting in decreased foraging or nesting habitat. The potential for direct impacts to individual burrowing owls is low given their highly mobile nature and the PD Measures that have been implemented into the design of the Project. These PD Measures include preconstruction surveys and implementation of a mitigation plan if burrowing owls are detected during preconstruction surveys. If individual owls are detected, no-work buffers will be implemented to protect burrowing owls or their nest sites. Indirect impacts such as construction noise or lighting may result in behavior impacts that deter burrowing owls from the Project vicinity.

The Project will result in up to 65.9 acres of disturbance resulting from construction of the 40.3-acre Project site, 19.4-acre gen-tie corridor, and 7.2-acre gen-tie laydown area. The 40.3-acre Project site will experience 15.9 acres of permanent impacts and 28.4 acres of temporary impacts. Permanent impacts will result from construction of the BESS array, Project substation, access and maintenance roads, perimeter fences, the sound barrier, and the stormwater ponds. Temporary impacts will occur as a result of the construction laydown areas and access areas which will not be converted into permanent structures. These temporary impacts areas will be restored and revegetated following construction completion.

In addition to the 40.3-acre Project site, construction within the gen-tie corridor and gen-tie laydown area will result in the permanent removal of 21.6 acres of orchards and minor impacts to developed and disturbed areas. Following construction, the permanent removed orchards will be available for

use by a variety of species, including burrowing owl, resulting in a net benefit and additional 5.7 acres of habitat that may be used by burrowing owls should they occur in the Project vicinity in the future.

The Project would have the potential for adverse impacts on burrowing owl foraging or nesting habitat during Project construction; however, with implementation of proposed PD Measures (**PD BIO-1** through **PD BIO-3** and **PD BIO-5**) outlined in Section 4.4.5, which include preconstruction burrowing owl surveys and avoidance, if necessary, the impacts will be limited to potentially suitable habitat rather than individuals and will be reduced to less than significant.

Furthermore, the Applicant has developed an Agricultural Mitigation Plan (Appendix 4.2-A) that has been incorporated as PD Measure **PD AG-01** to reduce impacts associated with conversion of farmland. Per **PD AG-01**, the Applicant will secure at least 60.5 acres of agricultural mitigation lands within Solano County in coordination with Solano Land Trust, as required by Solano County General Plan policies. While these mitigation lands will be preserved primarily for agricultural preservation, these lands will secondarily benefit burrowing owl foraging habitat and may provide nesting opportunities on the unused edges of the agricultural fields.

Golden Eagle

Species Description

The golden eagle is a Fully Protected species in California and is on the CDFW Watch List. The golden eagle is also protected by the MBTA, the Bald and Golden Eagle Protection Act (BGEPA), and several sections of the California Fish and Game Code. They are a year-round resident throughout much of California. They typically occur in rolling foothills, mountain areas, sage-juniper flats, and deserts (Zeiner et al. 1990a). Golden eagles can be found in a variety of habitats including forests, canyons, shrublands, grasslands, and oak woodlands. In California, golden eagles typically nest on steep cliffs, in large trees, and steep escarpments in grasslands, chaparral, shrublands, forest, and other vegetated areas (Grinnell and Miller 1944). Golden eagles have also been known to nest on electrical transmission towers traversing grasslands (Hunt et al. 1999). Golden eagles forage in open grassland habitats (Kochert et al. 2002). Preferred territory sites include those that have a favorable nest site, a dependable food supply (small- to medium-sized mammals, including ground squirrels and birds), and broad expanses of open country for foraging. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats (Johnsgard 1990).

Occurrence in the Project Vicinity

Golden eagle is known to occur in regions of Solano County. The CNNDB has 10 recorded occurrences of this species within Solano County, all located within the southern portion of the county (CDFW 2024a). There are no CNDDB recorded occurrences within 10 miles of the Project site.

Habitat Suitability

The annual grassland habitat and fallow farmlands within the Project vicinity may support small mammal prey and provide minimal foraging habitat for golden eagle. The Project disturbance areas lack preferred nesting habitats such as steep cliffs and large trees, but transmission towers present in the Project vicinity may function as a nesting location. However, it is unlikely that this species will nest in these towers due to the proximity of numerous disturbances such as I-80 and nearby towns and

residences. Due to the minimal habitat present in the vicinity, there is a low likelihood of this species to occur, and any potential occurrence is anticipated to be limited to rare flyovers.

Potential for Adverse Effects

During construction, the Project will result in 40.3 acres of disturbance to the Project site, which includes 15.9 acres of permanent impacts and 28.4 acres of temporary impacts that may provide potential foraging habitat for the golden eagle. Impacts to potential foraging habitat for golden eagles are minor because of the limited impact areas and the low-quality habitat present at the Project site. Furthermore, the preferred nesting habitat for this species is absent from the Project disturbance area so potential impacts to nest sites should be considered very low. Removal of the 21.6 acres of orchards within the gen-tie corridor and gen-tie laydown area will also increase the potential foraging grounds for this species, should they occur in the vicinity.

During the operation and maintenance phase of the Project, access to the facility will be minimal and infrequent. If golden eagles forage within the Project area during the operation phase of the Project, the maintenance activities are not expected to substantially exceed the baseline activity level of the area and no additional impacts are anticipated.

With the implementation of the proposed PD Measures (**PD BIO-1** through **PD BIO-3**) outlined in Section 4.4.5, the restoration of temporarily disturbed areas, and the net increase in potential foraging habitat as a result of Project construction, the Project is anticipated to have a less than significant impact on golden eagles.

Swainson's Hawk

The Applicant is proposing PD Measures to ensure that take, as defined by the California Fish and Game Code, of Swainson's hawk will not occur as a result of Project activities. Under the California Fish and Game Code, "take" means to hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill (California Fish and Game Code Section 86). As such, the Applicant is not requesting an Incidental Take Permit (ITP) for Swainson's hawk, as take of this species will not occur with implementation of the PD Measures, as described below. However, to ensure CEC data adequacy requirements are fulfilled, the Applicant is providing all of the necessary information for an ITP application for Swainson's hawk as identified in Table 4.4-5.

Table 4.4-5. Location of ITP Application Information

ITP Application Requirements	Opt-in Application Section
Common and scientific names of the species to be covered by the permit and the species' status under CESA	Please refer to Section 4.4.3.6 under *Swainson's Hawk: Species Description*
Complete description of the project or activity for which the permit is sought	Please refer to Section 2, *Project Description*
Location where the project or activity is to occur or to be conducted	Please refer to Section 2, *Project Description*
Analysis of whether and to what extent the project or activity for which the permit is sought could result in the taking of species to be covered by the permit	Please refer to Section 4.4.3.6 under *Swainson's Hawk: Potential for Adverse Effects*
Analysis of the impacts of the proposed taking on the species	Please refer to Section 4.4.3.6 under *Swainson's Hawk: Potential for Adverse Effects*

ITP Application Requirements	Opt-in Application Section
Analysis of whether issuance of the incidental take permit would jeopardize the continued existence of a species	Please refer to Section 4.4.3.6 under *Swainson's Hawk: Potential for Adverse Effects*
Proposed measures to minimize and fully mitigate the impacts of the proposed taking	Please refer to Section 4.4.3.6 under *Swainson's Hawk: Potential for Adverse Effects* and Section 4.4.5.1, *Species-specific Avoidance, Minimization, and Mitigation Measures*
Proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures	Please refer to Section 4.4.3.6 under *Swainson's Hawk: Potential for Adverse Effects* and Section 4.4.5.1, *Species-specific Avoidance, Minimization, and Mitigation Measures*
Description of the funding source and the level of funding available for implementation of the minimization and mitigation measures	Please refer to Section 4.4.3.6 under *Swainson's Hawk*

While the Applicant is not requesting an ITP for Swainson's hawk, to meet CEC data adequacy and ITP Application requirements, the Applicant has financial assets to implement the terms of an ITP, should one be required. In addition, the Applicant would provide financial assurances to guarantee that an adequate level of funding is available to implement all aspects of the Project. Should an ITP be required, the Applicant will provide financial assurance to CDFW in the form of an irrevocable letter of credit, a pledged savings account, or another form of security approved by CDFW before Project activities commence.

Species Description

Swainson's hawk is a state listed threatened species, which is also protected under the MBTA, that occurs in grasslands, shrublands, deserts, and agricultural regions in western North America. Swainson's hawks are open-country hunters and require large open landscapes for foraging. Swainson's hawks forage in grasslands, pastures, and croplands that support a suitable prey population. Swainson's hawks' nest in solitary trees or small groves of trees within close proximity to where they forage. Nests are typically found in riparian habitats or in large native trees such as valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), walnut (*Juglans californica*), and willow (*Salix* sp.) and nonnative trees such a eucalyptus (*Eucalyptus* sp.) or ornamental pine trees. Nest trees are often reused year after year. Most Swainson's hawks winter in South America, although some winter in the United States. They arrive in California in early March to establish nesting territories and nest in large trees (CDFG 1994).

Occurrence in the Project Vicinity

Swainson's hawk occurs through much of California's Central Valley, with the highest nesting densities occurring in Solano, Yolo, Sacramento, and San Joaquin Counties (Battistone et al. 2019). There are 200 CNDDB recorded occurrences of Swainson's hawk within 10 miles of the Project site (CDFW 2024a).

Swainson's hawk nest surveys were conducted between March 16, 2023, and June 29, 2023, following the recommendations outlined in the *Recommended Timing and Methodology for Swainson's hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). During the survey, two Swainson's hawk pairs were observed with active nests within 0.5 mile of the Project site or gen-tie corridor. One nest was located on the west side of the I-80 southbound onramp from N. Meridian Road and west of the PG&E Vaca-Dixon Substation. The second nest was on the east

side of N. Meridian Road northwest of the substation. Additionally, nesting behavior was observed by a third Swainson's hawk pair located in a eucalyptus tree on the west side of Byrnes Road approximately 0.7 mile south of the Project site. During the 2024 burrowing owl surveys, the nest on the west side of the I-80 southbound onramp from N. Meridian Road was occupied by a Swainson's hawk pair.

Habitat Suitability

The agricultural lands within and surrounding the Project site provide suitable foraging habitat for Swainson's hawks. In addition, numerous large, scattered trees and utility towers within the Project vicinity provide suitable nesting habitat. Based on the presence of suitable foraging and nesting habitat and known occupancy in the vicinity of the Project site, Swainson's hawks are considered present within the Project vicinity. In addition, Swainson's hawk pairs often reuse existing nests. There is a high likelihood of Swainson's hawk presence in the Project vicinity in the future.

Potential for Adverse Effects

During construction, activities such as vegetation removal, grading, or excavations could alter potentially suitable foraging habitat for Swainson's hawk. The Project is anticipated to result in up to 65.9 acres of disturbance resulting from construction of the 40.3-acre Project site, 19.4-acre gen-tie corridor, and 7.2-acre gen-tie laydown area. Permanent impacts to the 40.3-acre Project site will result from construction of the BESS array, Project substation, access and maintenance roads, perimeter fences, the sound barrier, and the stormwater ponds and total approximately 15.9 acres. Temporary impacts to the 40.3-acre Project site will occur as a result of the construction laydown areas and access areas, which will not be converted into permanent structures, and total approximately 28.4 acres (Figure 4.4-3). These temporary impacts areas will be restored and revegetated following construction completion and will be accessible for Swainson's hawk use including foraging.

Construction activities occurring north of I-80 and within 0.25 mile of the known Swainson's hawk nest include vegetation removal, including potential tree removal near structures 7 and 8, installation of up to four overhead structures (structures 7 through 10) to connect the Project to the Vaca-Dixon Substation, stringing of the 230-kV transmission line, and completion of the New Corby Bay. Pacific Gas and Electric (PG&E) will be responsible for the portion of the gen-tie between the point of change of ownership (POCO; structure 6) and the point of interconnection at the PG&E Vaca-Dixon Substation, including the final five structures (structures 6 through 10), the I-80 crossing, and the New Corby Bay. The specific height, location, and design of the structures for the gen-tie line from the POCO to Vaca-Dixon Substation will be determined by PG&E during final design.

Construction activities that would occur within 0.25 mile of the known Swainson's hawk nest will occur outside of the breeding season, defined as March 1 through September 15, to avoid impacts to nesting Swainson's hawk. However, if preconstruction nesting bird surveys confirm that no Swainson's hawk pair is actively nesting within 0.25 mile of this location, work may occur during anytime of the year provided that no other nesting birds or biological constraints are encountered during preconstruction surveys. During operations, infrastructure may be subject to periodic inspection; however, these inspections are expected to be minimal and infrequent and would not result in take of Swainson's hawk.

Due to the timing restriction of construction activities, potential take of Swainson's hawk will be avoided, and the Applicant is not requesting incidental take authorization.

Figure 4.4-3. Impacts to Swainson's Hawk Foraging Habitat

Construction within the 19.4-acre gen-tie corridor and 7.2-acre gen-tie laydown area will result in the permanent removal of 21.6 acres of orchards and minor impacts to developed and disturbed areas adjacent to the PG&E Vaca-Dixon Substation. The removal of 21.6 acres of orchards and subsequent restoration of the gen-tie corridor and gen-tie laydown area will convert unsuitable orchard habitat to suitable foraging habitat for Swainson's hawk. While construction within the 40.3-acre Project site will permanently remove 15.9 acres of foraging habitat, removal of the orchard lands will open up 21.6 acres of new foraging habitat for Swainson's hawk. This will result in a net benefit and additional 5.7 acres of foraging habitat that may be used by Swainson's hawk following construction completion (Figure 4.4-3).

Direct impacts to Swainson's hawk include reduction or loss of foraging habitat as a result of vegetation removal or construction activities. However, while availability of potential foraging habitat will be temporarily reduced or lost during construction, there is an abundance of suitable foraging habitat surrounding the Project site. Development within the Project disturbance area may also result in indirect impacts to foraging Swainson's hawk and may result in the potential destruction of small mammal burrows and could result in changes to prey quality or quantity. The Project will not result in take of individuals because the species is highly mobile and could easily avoid the active construction areas while foraging.

Large trees that could potentially provide nesting habitats for Swainson's hawk are located within 0.5 miles of the Project disturbance area; therefore, the Project has the potential to result in direct or indirect impacts on breeding Swainson's hawks, their nests, young, or eggs if new unidentified nests are established prior to construction activities. Construction-related impacts, such as increased human presence, or construction-related noise and vibrations could result in disturbances to adults and result in insufficient nest attendance. However, the Applicant is incorporating PD Measure **PD BIO-6**, which includes conducting pre-construction surveys for Swainson's hawk during the nesting season and implementing no-work buffers, to the maximum extent feasible, if an active Swainson's hawk nest is found within 0.25 mile of construction activities. With implementation of this PD Measure, take of individual Swainson's hawk, or their nests, young, or eggs, will be avoided.

During the operations and maintenance phase of the Project, access to the facility will be minimal and infrequent. If Swainson's hawk forage or nest within the Project area during the operation phase of the Project, the maintenance activities are not expected to substantially exceed the baseline activity level of the area, and no additional impacts are anticipated.

Following construction completion, the Applicant will restore all temporarily impacted areas. The removal of an orchard will result in a net benefit to Swainson's hawk as it will open up an additional 5.7 acres of foraging habitat. In addition, the Applicant has developed an Agricultural Mitigation Plan (Appendix 4.2-A) that has been incorporated as PD Measure **PD AG-01** to reduce impacts associated with conversion of farmland. Per **PD AG-01**, the Applicant will secure at least 60.5 acres of agricultural mitigation lands within Solano County in coordination with Solano Land Trust, as required by Solano County General Plan policies. While these mitigation lands will be preserved primarily for agricultural preservation, these lands will be protected in a manner with which the Project site is not protected, and will also serve as superior foraging habitat preservation for the Swainson's hawk. In addition, the protected agricultural mitigation lands (at least 60.5 acres) will result in a much greater than 1:1

mitigation ratio for loss of Swainson's hawk foraging habitat as a result of the Project.~~Preservation of the agricultural lands would equate to a 1:3.8 ratio of permanent Project impacts to lands being preserved~~. As such, the Applicant is not proposing separate additional compensatory mitigation for impacts to Swainson's hawk foraging habitat.

While the Project vicinity may support Swainson's hawk during some parts of the year, with implementation of the Applicant-incorporated PD Measures, Project activities will not result in take of the species and will not jeopardize the continued existence of this species. While the availability of potential foraging and nesting habitat may be temporarily reduced or lost during construction, there is an abundance of suitable foraging and nesting habitat surrounding the Project vicinity. Based on interpretation of U.S. Department of Agriculture cropland data (USDA 2023), there is approximately 125,000 acres of suitable foraging habitat for the species within a 10-mile buffer of the Project site (see Figure 4.4-4). The permanent loss of 15.9 acres as a result of the Project represents approximately 0.013 percent of the available foraging habitat within 10 miles of the Project site. As such, removal of this foraging habitat is not anticipated to affect Swainson's hawk. In addition, following construction, temporarily impacted areas and the removed orchard will remain available for wildlife use and Swainson's hawk foraging. Prey species are expected to recolonize the Project site following construction, which could provide continued foraging opportunities for individual hawks. The temporary and minor loss of foraging habitat during construction will not impact the local population or the regional population, and permanent losses of suitable foraging habitat will be more than offset through the new foraging habitat that will be gained through the removal of the orchard. Therefore, Project activities are not anticipated to affect foraging for Swainson's hawk, result in take of individuals, or jeopardize the continued existence of the species.

The Project will have the potential for direct or indirect impacts on Swainson's hawk foraging lands, but will not directly impact individuals or the reproductive success of any active Swainson's hawk nest during Project construction. With implementation of proposed PD Measures (**PD BIO-1** through **PD BIO-3,** and **PD BIO-6**) outlined in Section 4.4.5, which include preconstruction Swainson's hawk surveys and avoidance, the restoration of temporarily disturbed areas, and the net increase in potential foraging habitat as a result of Project construction, the impacts to this species will be limited to potential foraging areas, will not result in take of individuals or their nests, and will be reduced to less than significant impacts.

Figure 4.4-4. Swainson's Hawk Foraging Habitat

Northern Harrier

Species Description

The northern harrier is a California SSC and is protected under the MBTA. This species breeds and forages in a variety of open habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered perches, such as shrubs or fence posts. These habitats may include freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, weed fields, pastures, and some croplands. Harriers nest on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas (MacWhirter and Bildstein 1996).

Occurrence in the Project Vicinity

The Project vicinity is within the breeding and yearlong occurrence range of northern harriers (Shuford and Gardali 2008). There are two CNDDB occurrences of northern harriers within 10-miles of the Project site, with the nearest occurrence approximately 4.5 miles south of the Project site (CDFW 2024a).

Habitat Suitability

The annual grasslands and fallow and cultivated agricultural fields in the vicinity of the Project site provide suitable foraging habitat. Due to the regular maintenance of agricultural fields, nesting habitat in the vicinity of the Project site is limited.

Potential for Adverse Effects

During construction, the Project will permanently impact 15.9 acres resulting from construction of the BESS array, Project substation, access and maintenance roads, perimeter fences, and the sound barrier. The Project will also result in 28.4 acres of temporarily impacted areas that include laydown yards and non-permanent structures, which following construction will be revegetated and restored to functional use. Impacts to potential foraging habitat that could occur as a result of the Project are minor because of the limited impact areas and relative abundance of suitable foraging habitat in the Project vicinity.

Furthermore, the gen-tie corridor and gen-tie laydown area will result in permanent removal of 21.6 acres of orchard land cover and also impact developed and disturbed areas in the vicinity of the PG&E substation. Orchards are generally unsuitable foraging grounds for northern harriers but following the permanent removal and restoration of this 21.6 acres, this area may be used as foraging habitat, resulting in a net increase in foraging habitat as a result of the Project.

Construction activities such as excavation, grading, or stockpiling of soil may deter individuals from foraging in the immediate vicinity of the Project disturbance area but is not anticipated to result in additional impacts with the implementation of the proposed PD Measures outlined in Section 4.4.5.

During the operation and maintenance phase of the Project, access to the facility will occur via the improved surface roads and is expected to be minimal and infrequent. If northern harrier forage within the Project vicinity during the operation phase of the Project, it is unlikely that adverse impacts will occur resulting from the infrequent site visits because the maintenance activities are not expected

to substantially exceed the baseline disturbance level of the area. Thus, no impacts to this species are anticipated during the operations and maintenance phase of the Project.

With the implementation of the proposed PD Measures (**PD BIO-1** through **PD BIO-3**) outlined in Section 4.4.5, the restoration of temporarily disturbed areas, and the net increase in potential foraging habitat as a result of Project construction, the Project is anticipated to have a less than significant impact on northern harriers.

Furthermore, the Applicant has developed an Agricultural Mitigation Plan (Appendix 4.2-A) that has been incorporated as PD Measure **PD AG-01** to reduce impacts associated with conversion of farmland. Per **PD AG-01**, the Applicant will secure at least 60.5 acres of agricultural mitigation lands within Solano County in coordination with Solano Land Trust, as required by Solano County General Plan policies. While these mitigation lands will be preserved primarily for agricultural preservation, these lands will also serve as foraging habitat preservation to numerous special status species, including the northern harrier.

White-tailed Kite

Species Description

The white-tailed kite is a California Fully Protected species and is also protected by the MBTA. Kites inhabit savannas, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields and tend to avoid heavily grazed areas (Cornell Lab of Ornithology 2024). This species forages in grasslands, marshes, riparian edges, and cultivated fields where prey species (mainly small mammals) are relatively abundant (Kaufman 1996). White-tailed kites typically nest on the tops of trees close to good foraging locations.

Occurrence in the Project Vicinity

White-tailed kites are considered a relatively common yearlong resident in the California inland valleys and coastal areas and often associated with open grasslands and farmlands that provide foraging habitat. During the 2023 Swainson's hawk nest surveys, white-tailed kites were observed foraging and perching within 0.5 mile of the Project disturbance area. Additionally, the CNDDB noted five occurrences within 10 miles of the Project site, with the closest occurrence approximately 0.9 mile to the southwest (CDFW 2024a).

Habitat Suitability

The annual grasslands and fallow and cultivated agricultural fields in the vicinity of the Project site provide suitable foraging habitat. Perch points such as transmission towers are also located within the Project corridor and may be used during foraging events. The non-native forest patches and roadside trees in the vicinity of the Project site provide suitable nesting habitat for this species. Based on the known presence of white-tailed kites and suitable foraging and nesting habitats there is a high potential for these species to occur in the Project vicinity.

Potential for Adverse Effects

During construction, activities such as vegetation removal, grading, or excavations could alter potentially suitable foraging habitat for white-tailed kites. The Project will result in up to 65.9 acres of

disturbance resulting from construction of the Project site, clearance of the gen-tie corridor, and use of the gen-tie laydown area. The 40.3-acre Project site will result in 15.9 acres of permanent impacts and 28.4 acres of temporary impacts. These temporary impacts areas will be restored, revegetated, and may be used for foraging following construction completion. While availability of potential foraging habitat would be reduced or lost during construction, there is an abundance of suitable foraging habitat surrounding the Project site which may be utilized by white-tailed kites during and after construction. Additionally, the gen-tie corridor and gen-tie laydown area will permanently remove 21.6 acres of orchard lands that, following construction, will be available as foraging habitat for white-tailed kites, resulting in an additional 5.7 acres of foraging habitat.

Large trees that could potentially provide nesting habitats for white-tailed kites are located within the vicinity of the Project site. If project construction activities occur during their nesting season and this species is nesting adjacent to the Project disturbance area at the time of construction, there may be direct or indirect impacts to their nests, young, or eggs.

The Project would have the potential for adverse impacts on white-tailed kite foraging or nesting habitat during Project construction; however, with implementation of the proposed PD Measures (**PD BIO-1** through **PD BIO-3**) outlined in Section 4.4.5, the restoration of temporarily disturbed areas, and the net increase in potential foraging habitat as a result of Project construction, the Project is anticipated to have a less than significant impact white-tailed kites.

Furthermore, the Applicant has developed an Agricultural Mitigation Plan (Appendix 4.2-A) that has been incorporated as PD Measure **PD AG-01** to reduce impacts associated with conversion of farmland. Per **PD AG-01**, the Applicant will secure at least 60.5 acres of agricultural mitigation lands within Solano County in coordination with Solano Land Trust, as required by Solano County General Plan policies. While these mitigation lands will be preserved primarily for agricultural preservation, these lands will also serve as foraging habitat preservation to numerous special status species, including white-tailed kites.

Bald Eagle

Species Description

Bald eagle is state listed as endangered and is protected under the MBTA, BGEPA, and several sections of the California Fish and Game Code. Bald eagle is a permanent resident and uncommon winter migrant in California (Zeiner et al. 1990a). Breeding areas include coasts, rivers, lakes, reservoirs, and cliffs. Wintering bald eagles are associated with open water for foraging. They nest in mature trees that are somewhat close (within 1.25 miles) to water with suitable foraging habitat. Although nests can be closer, the average distance between bald eagle nests and human development is typically more than 1,640 feet (500 meters) (Buehler 2000).

Occurrence in the Project Vicinity

There is one CNNDB recorded occurrence of bald eagles within 10 miles of the Project site, located approximately 9.25 miles southwest. One to two adults, and occasional juvenile, bald eagles have been documented at this occurrence from 2008 through 2018 (CDFW 2024a).

Habitat Suitability

The Project vicinity has low potential for bald eagle presence. Preferred open water foraging grounds and nesting locations are not present within the Project vicinity. The annual grasslands present in the Project vicinity provide low quality foraging habitat. Potential presence of bald eagle is anticipated to be limited to rare flyovers.

Potential for Adverse Effects

During construction, the Project will result in 40.3 acres of disturbance to the Project site, which includes 15.9 acres of permanent impacts and 28.4 acres of temporary impacts that may provide potential foraging habitat for the bald eagle. In addition, the gen-tie corridor and gen-tie laydown area will result in the removal of the 21.6-acres of orchards, which may increase the potential foraging grounds for this species, should they occur in the vicinity. Impacts to potential foraging habitat for the bald eagles are minor because of the limited impact areas and the low-quality habitat present at the Project site. Furthermore, the preferred nesting habitat for this species is absent from the Project vicinity so potential impacts to nest sites should be considered very low.

During the operation and maintenance phase of the Project, access to the facility will be minimal and infrequent. If bald eagles forage within the Project vicinity during the operation phase of the Project, the maintenance activities are not expected to substantially exceed the baseline activity level of the area and no additional impacts are anticipated.

With the implementation of the proposed PD Measures (**PD BIO-1** through **PD BIO-3**) outlined in Section 4.4.5, the restoration of temporarily disturbed areas, and the net increase in potential foraging habitat as a result of Project construction, the Project is anticipated to have a less than significant impact on bald eagles.

Western Red Bat

Species Description

The western red bat is a CDFW SSC and is locally common in some areas of California, occurring from Shasta County to the Mexican border. Western red bats are usually solitary species and prefer habitat mosaics that have trees for roosting and open areas for foraging. Roosting occurs primarily in the foliage of large trees and less often in shrubs and is often located in edge habitats adjacent to streams, fields, or urban areas. The preferred roost sites are protected from above but open below. Foraging habitat occurs in a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands (Zeiner et al. 1990b).

Occurrence in the Project Vicinity

There is one CNDDB occurrence within 10 miles of the Project site, located approximately 9 miles northwest of the Project site, from 2013 (CDFW 2024a).

Habitat Suitability

There is a low potential for this species to occur in the vicinity of the Project site. The orchards and surrounding trees may provide suitable roosting habitat and the open croplands and grasslands may provide suitable foraging habitat for this species.

Potential for Adverse Effects

The Project will result in up to 65.9 acres of disturbance resulting from construction of the 40.3-acre Project site, 19.4-acre gen-tie corridor, and 7.2-acre gen-tie laydown area, which may provide low-quality habitat foraging and roosting habitat for the western red bat. During construction, the Project will result in 40.3 acres of disturbance to the Project site, which includes 15.9 acres of permanent impacts and 28.4 acres of temporary impacts that may provide potential foraging habitat for the western red bat. In addition to the 40.3-acre Project site, construction within the gen-tie corridor and laydown area will result in the permanent removal of 21.6 acres of orchards and minor impacts to developed and disturbed areas. The removal of the 21.6 acres of orchards may result in a loss of potential roosting habitat for this species, should they occur in the Project vicinity.

During the operation and maintenance phase of the Project, the facility noise or lighting may disrupt the baseline activity and cause behavior changes to foraging or roosting bats but is not expected to result in direct mortality to this species. With the implementation of the proposed PD Measures (**PD BIO-1**) outlined in Section 4.4.5 and the restoration of temporarily disturbed areas the Project is anticipated to have a less than significant impact on western red bats.

The Applicant has developed an Agricultural Mitigation Plan (Appendix 4.2-A) that has been incorporated as PD Measure **PD AG-01** to reduce impacts associated with conversion of farmland. Per **PD AG-01**, the Applicant will secure at least 60.5 acres of agricultural mitigation lands within Solano County, as required by Solano County General Plan policies. While these mitigation lands will be preserved primarily for agricultural preservation, these lands will also serve as potential foraging habitat for western red bats.

Migratory Birds and Raptors

Non-special status migratory birds and raptors protected by the MBTA and California Fish and Game Code have the potential to nest and forage in the Project vicinity. Although limited, trees and shrubs in the Project vicinity including orchards and non-native forest provide suitable habitat for tree- and shrub-nesting birds such as yellow-billed magpie (*Pica nuttalli*) and loggerhead shrike (*Lanius ludovicianus*). Gravel roads in the Project vicinity may be used for nesting by killdeer (*Charadrius vociferus*). Electrical towers in the Project vicinity also provide suitable nesting habitat for raptors such as red-tailed hawks and some other birds such as common raven (*Corvus corax*). The breeding season for migratory birds varies by species but generally extends from February through August. Implementation of the avoidance, minimization, and/or PD Measures outlined in Section 4.4.5 (**PD BIO-1** through **PD BIO-3**) will avoid loss of individuals, eggs, or nests, and the restoration of temporarily disturbed areas will reduce impacts to less than significant.

4.4.3.7 Impacts to Riparian Habitat or Sensitive Natural Communities[14]

Four sensitive natural communities for a total 12 occurrences have been documented to occur within 10-mile Project disturbance area (CDFW 2024b). Sensitive Natural Communities include Coastal and Valley Freshwater Marsh (1 occurrence), Coastal Brackish Marsh (3 occurrences), Valley Needlegrass Grassland (4 occurrences), and Northern Claypan Vernal Pool (4 occurrences). No occurrences of

[14] Appendix B (g) (13) (C) (i)

natural communities have been reported from the Allendale 7.5-minute USGS quadrangle where the Project is located. The nearest sensitive plant community is Valley Needlegrass Grassland community 6.5 miles south of the Project site within the Jepson Grasslands managed by the Solano Lands Trust. Based on field surveys, aerial imagery, and historical occurrences, no sensitive natural communities or riparian habitat are present within or 1 mile from the Project site. Thus, the Project will have no impact on riparian or sensitive natural communities.

4.4.3.8 Jurisdictional Waters and Wetlands

A total of 4 aquatic resource types and 17 individual aquatic features were mapped within the Project disturbance area and an associated 250-foot buffer (Table 4.4-2; Appendix A of Appendix 4.4-D). Preliminary jurisdictional determinations of the onsite aquatic resources are included below. No jurisdictional area will be impacted during Project construction or operations. The Project will construct overhead powerlines that will span the intermittent riverine feature, and no horizontal directional drilling or similar action under this feature will be conducted. Prior to construction activities, including orchard removal, the Applicant or its contractors will install erosion control materials (BMPs) at the top of the bank of the intermittent riverine feature to ensure construction-related debris or personnel do not impact the aquatic feature.

U.S. Army Corps of Engineers

All mapped ditches appear to be excavated in uplands, are not realigned natural features, and are subject to maintenance. Some of these ditches also receive pumped water for irrigation purposes. These features would therefore likely not be considered jurisdictional under Section 404 of the Clean Water Act (CWA).

The mapped basin appears to be excavated in uplands and isolated and would therefore likely not be considered jurisdictional under Section 404 of the CWA. Similarly, the mapped seasonal wetlands are also isolated from other aquatic features and would therefore likely not be considered jurisdictional under Section 404 of the CWA.

Lastly, the mapped intermittent riverine feature, consisting of a reach of Gibson Canyon Creek, appears to eventually drain into Cache Slough, a tidal body of water. It is therefore likely the mapped intermittent riverine feature would be considered jurisdictional under Section 404 of the CWA.

State Water Resource Control Board/Regional Water Quality Control Board

The State Water Resource Control Board (SWRCB) would regulate the intermittent riverine feature under Section 401 of the CWA because it would be under U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the CWA. SWRCB would not regulate ditches, basins, or seasonal wetlands under Section 401 of the CWA because the waters/wetlands would not be under USACE jurisdiction pursuant to Section 404 of the CWA.

The ditches and basins identified would be under the jurisdiction of the SWRCB pursuant to the Porter-Cologne Act and definition of a water of the State because they are “surface waters” within the State. These features meet the criteria to be considered waters of the State.

The seasonal wetlands delineated in the study area: (1) have continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes, or the area lacks vegetation. Therefore, the seasonal wetlands meet the State wetland criteria on this basis.

California Department of Fish and Wildlife

CDFW regulates activities that substantially affect the bed and bank of a stream, lake, or river. The mapped intermittent riverine features would therefore likely be regulated by CDFW under Section 1600 et. seq. of the Fish and Game Code. The mapped seasonal wetlands and basins likely would not be regulated under CDFW since they are not streams, lakes, or rivers. The mapped ditches could be regulated by CDFW if they are channelizing a stream or have an upstream or downstream connection to other waters. The mapped ditch features that do have a connection with a stream are D-2, D-10, D-11, D-12, and D-16, and therefore, these features could be regulated by CDFW. The remainder of the mapped ditches do not have a surface connection with a stream and therefore would likely not be regulated by CDFW.

4.4.3.9 Wildlife Nurseries and Movement Corridors[15]

A functional network of connected wildlands is essential to continued support of California's diverse natural communities in the face of human development and climate change. Corridors along drainages, valleys, and other features facilitate wildlife movement and connectivity between areas of suitable habitat; the corridors (e.g., linkages) and associated habitats are essential to population viability.

Multiple conservation planning initiatives modeled wildlife connectivity and movement in the greater San Francisco Bay Area including Solano County, where the Project is located (CDFW 2024b; Penrod et al. 2001, 2013; Spencer et al. 2010). Models identified large areas of relatively natural habitat blocks that support native biodiversity and areas essential for ecological connectivity between them.

According to connectivity models, wildlife movement corridors and linkages that connect areas of suitable wildlife habitat are absent within the Project disturbance area. The Project vicinity is classified by CDFW's Terrestrial Connectivity Areas of Conservation Emphasis as having limited connectivity opportunity (Category 1) (CDFW 2024b). No big game migration data from CDFW suggests this area is an important linkage or corridor for big game species. The Project disturbance area is outside essential connectivity areas, natural landscape blocks and least cost corridors or linkages as modeled by the California Essential Habitat Connectivity Project and associated models (Spencer et al. 2010; Penrod et al. 2013). The highly modified landscape along the I-80 corridor includes fragmented habitat, transportation barriers, and anthropogenic disturbances that contribute to the low biological value for wildlife movement and habitat connectivity. Local wildlife may disperse through the Project site, but the Project will not create any substantial additional barriers to dispersal, Additionally, no evidence of the existence of a wildlife nursery site (e.g., rookeries for birds or

[15] Appendix (g) (13) (A) (viii)

maternal roosts for bats) were observed during field surveys. Thus, the Project is not anticipated to impact wildlife nurseries or movement corridors.

4.4.3.10 Local Policies

The Solano County General Plan (Solano County 2008) is a guide for land development and conservation in unincorporated portions of Solano County. Chapter 4, *Resources*, purpose is to identify goals, policies, and implementation measures to protect nature, cultural, and open resource spaces and focuses on conserving, preserving, and enhancing these resources. The general plan encourages the preservation of wetlands, protection of watersheds, conservation of riparian vegetation, preservation of special status species and their habitats, protecting wildlife movement corridors, and promoting energy conservation and renewable energy. The plan also identifies Priority Habitat Areas and Resource Conservation Areas, neither of which occur in the vicinity of the Project site. Loss of special status species and their habitat as a result of implementing the Project would conflict with these policies. However, implementation of avoidance, minimization, and/or PD Measures **PD BIO-1** through **PD BIO-7** and restoration of temporarily disturbed areas, impacts to local policies will be less than significant.

4.4.3.11 Habitat Conservation Plans/Natural Community Conservation Plans

The Solano Multi-Species Habitat Conservation Plan (Solano County Water Agency 2012) establishes a framework for complying with federal and state regulations for endangered species while accommodating future urban growth, development of infrastructure, and ongoing operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the Habitat Conservation Plan participants within the plan area. Plan participants include various municipalities, and irrigation, water, sanitation, and reclamation districts. The Applicant and unincorporated areas of Solano County are not Plan participants and are not covered under the Habitat Conservation Plan. The plan area encompasses approximately 577,000 acre of Solano County and approximately 8,000 acres of Yolo County. Covered activities under the Habitat Conservation Plan are associated with urban development, ongoing operations, maintenance, and new construction of plan participant facilities, and management, enhancement, habitat restoration/construction, monitoring, and relocation of covered species. The Project site is located in a Covered Activity Zone that only allows ongoing operation, maintenance, and construction of irrigation and flood control facilities. Therefore, in addition to the Applicant not being a plan participant, the Project would also not be considered a covered activity under the Solano Multi-Species Habitat Conservation Plan. However, implementation of avoidance, minimization, and/or measures **PD BIO-1** through **PD BIO-7** and restoration of temporarily disturbed areas, impacts to local policies will be less than significant.

4.4.3.12 CEQA Impact Analysis

The following impact analysis includes an evaluation of the CEQA Environmental Checklist threshold criteria. For the purposes of this analysis, implementation of the proposed Project will cause a significant impact on biological resources if it resulted in any of the described adverse effects, interferences, or conflicts in the following text.

IMPACT 4.4-1: 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, U.S. Fish and Wildlife Service, or NOAA Fisheries? (Less than Significant Impact)

Impacts on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS are assessed in Sections 4.4.3.5 and 4.4.3.6. Impact determinations are made for each species. When necessary, PD Measures were developed and incorporated into the Project to reduce any potentially significant impacts to less than significant; see Section 4.4.5, *Mitigation Measures*, for a full list of proposed PD Measures, including species-specific measures in Section 4.4.5.1. As discussed in the sections referenced herein, impacts on any species identified as a candidate, sensitive, or special status species will be less than significant with incorporation of the proposed PD Measures.

IMPACT 4.4-2: Would the project 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? (No Impact)

The Project site does not support any riparian habitat or otherwise sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS as described in Section 4.4.3.7. The Project site is not located within designated final or proposed critical habitats for federally listed plant or wildlife species, nor is it located within or adjacent to critical habitats. The Project will have no impacts to these resources.

IMPACT 4.4-3: 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 Impact)

The potential for a substantial adverse effect from the Project 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 is assessed in Section 4.4.3.8. As discussed therein, no federally protected wetlands are present within the Project vicinity. Two state protected wetlands are present within the Project vicinity. The Project will avoid these wetlands; thus, the Project will have no impact on state or federally protected wetlands.

IMPACT 4.4-4: 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 potential for the Project to 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 is assessed in Section 4.4.3.9. As discussed therein, the Project will have no impact on 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.

IMPACT 4.4-5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less than Significant Impact)

Potential conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance are assessed in detail in Section 4.4.4.10. As discussed therein, the potential for the Project to conflict with any local policies or ordinances protecting biological resources will be less than significant with incorporation of the proposed PD Measures.

IMPACT 4.4-6: 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? (Less than Significant Impact)

Potential conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan are assessed in Section 4.4.4.11. As discussed therein, the Project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan with incorporation of the proposed PD Measures.

4.4.3.13 PG&E Facilities

To accommodate the Project, PG&E will be responsible for siting, design, and construction of the 230-kV gen-tie line between the point of change of ownership (POCO) to their substation, including new interconnection facilities. The Applicant will design, construct, own, and operate the southern 0.9-mile portion of the gen-tie line from the Project substation to the POCO within the gen-tie corridor south of I-80. PG&E will be responsible for the 0.2-mile-long gen-tie between the POCO and the point of interconnection at the PG&E Vaca-Dixon Substation, including the final five structures, the I-80 crossing, and the New Corby Bay, as shown in Figure 1-3 of Section 1, *Executive Summary*. The gen-tie is described in further detail in Section 3.0, *Electrical Transmission*. Potential impacts from the PG&E gen-tie line are incorporated into the impacts assessed in Sections 4.4.3.1 through 4.4.3.12.

4.4.4 Cumulative Effects[16, 17]

The cumulative analysis provided in this document was developed by reviewing publicly available resources for active projects within Solano County, the City of Vacaville, and the City of Dixon (see Table 4.11-4 in Section 4.11, *Land Use and Planning*, of this document). The proposed Project is not anticipated to create or cause cumulative impacts to special status species when combined with other potential projects in the region for the following reasons:

- The proposed Project will result in a beneficial net gain of potential foraging and/or nesting habitat for special status species.
- With implementation of PD Measures **PD BIO-1** through **PD BIO-7,** the Project will avoid or minimize impacts to special status species regulated by the CDFW and/or USFWS.

[16] Appendix B (g) (1)
[17] Appendix B (g) (13) (E) (i)

- During the operations and maintenance phase of the Project, access to the facility is expected to be minimal and infrequent.

In addition, the Project will not impact natural sensitive communities including riparian habitat, state or federally protected wetlands, or established wildlife corridors. Therefore, the Project will not contribute to any significant cumulative effect to these resources. Thus, no cumulative impacts from this Project are anticipated.

4.4.5 Mitigation Measures [18, 19]

No mitigation measures for construction-related activities are proposed because the Applicant is incorporating the PD Measures described below into the design of the Project. The following sections describe measures to mitigate adverse environmental impacts, methods to monitor protected species, and overall best management practices for the proposed Project.

PD BIO 1: Best Management Practices, On-site Monitoring, and Worker Awareness Training

PD BIO-1a: The Applicant will submit the resumes, including contact information, of the proposed Designated Biologist and any Biological Monitors to the Compliance Project Manager (CPM). The resumes will include applicable degrees and experience for approval by the CPM. The approved Designated Biologist and Biological Monitors will be responsible for overseeing biological resources compliance with the protective measures during any site or related facilities mobilization, ground disturbance, construction, and closure activities. The Designated Biologist and Biological Monitors will have the authority to halt activities in violation of the biological resources protective measures or in areas which may affect a sensitive resource or species. If the Designated Biologist and Biological Monitor halts construction activities, the CPM will be notified, and work will proceed only after corrective measures have been taken. The Designated Biologist and Biological Monitors will have a copy of the Project permit(s) with them during all construction activities and will notify the Applicant and the CPM of any noncompliance with biological resources.

PD BIO-1b: Qualified biologists will conduct preconstruction clearance surveys for all special status wildlife species prior to initial ground-disturbing activities. The biologists will be current with the latest information on protocols and guidelines and have thorough and current knowledge of relevant species' behavior, natural history, ecology, and physiology.

PD BIO-1c: Based on the results of preconstruction surveys, the approved Designated Biologist or Biological Monitor may oversee the initial ground disturbance of Project construction activities with the potential to impact special status species.

PD BIO-1d: A Worker Environmental Awareness Program (WEAP) will be prepared, and approved by the CPM, to address the types of construction activities that may affect special status species. The WEAP will describe the protective measures stipulated in the permits. Special emphasis will be placed on explaining the protective measures developed for special status species and the consequences of noncompliance. At a minimum, the program will contain information on physical characteristics,

[18] Appendix B (g) (1); Appendix B (g) (13) (F) through (g) (13) (F) (iii)
[19] Appendix B (g) (13) (G)

distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protective measures associated with the listed species. The WEAP will be administered to all onsite personnel including employees, contractors, contractors' employees, supervisors, inspectors, subcontractors, and delivery personnel. The program will be administered onsite by the approved Designated Biologist or Biological Monitor. It may include an oral presentation, video/PowerPoint, and written materials.

PD BIO-1e: To discourage attraction by predators of protected species, all food-related trash items, such as wrappers, cans, bottles, and food scraps, will be disposed of in solid, closed containers (trash cans) daily. Onsite trash receptacles will be emptied as necessary (for example, weekly) to prevent overflow of trash. Trash removed from the receptacles will be hauled to an offsite waste disposal facility.

PD BIO-1f: Project-related vehicles during construction will observe a 15-mile-per-hour speed limit while onsite, except on county roads and state highways.

PD BIO-1g: To prevent inadvertent entrapment of special status species, or other animals during construction, at the end of each workday all excavated, steep-walled holes or trenches more than 2 feet deep will be equipped with one or more escape ramps constructed of earth fill or wooden planks or potentially covered with plywood or similar materials if feasible . Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by the onsite Biological Monitor or construction personnel trained by the monitor. If a trapped special status wildlife species is discovered, the appropriate agency, USFWS and/or CDFW will be contacted.

PD BIO-1h: To control erosion, sedimentation, and/or the release of storm waters laden with sediment, fuels, lubricant, and other deleterious material from out of the approved work areas during and after Project implementation, the Applicant will implement appropriate best management practices which typically include straw wattles, silt fences, straw bales and diverting runoff from disturbed areas. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 200 feet from any water body. Spill response materials will be kept onsite at all times. Before work begins, the Applicant will provide prompt and effective response to any accidental spills. During the WEAP, all workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

PD BIO-1i: Access by Project-related personnel to the Project site will be restricted to established and/or approved access roads. Cross-country vehicle and equipment use outside designated work areas will be prohibited.

PD BIO-1j: Other than law enforcement or security personnel, Project personnel will be prohibited from bringing pets and firearms to the Project site.

PD BIO-1k: All unused material and equipment, including soil and rock piles, will be removed upon completion of construction.

PD BIO 2: Migratory Birds

PD BIO-2a: If Project ground-disturbing or vegetation clearing and grubbing activities commence during the avian breeding season (February 1 through August 31), a qualified biologist shall conduct a

pre-construction nesting bird survey no more than 14 days prior to initiation of Project activities. The survey area shall include suitable raptor nesting habitat within 300 feet of the Project boundary (inaccessible areas outside of the Project site can be surveyed from the site or from public roads using binoculars or spotting scopes). Pre-construction surveys are not required in areas where Project activities have been continuous since prior to February 1, as determined by a qualified biologist. Areas that have been inactive for more than 14 days during the avian breeding season must be re-surveyed prior to resumption of Project activities. If no active nests are identified, no further mitigation is required. If active nests are identified, the following measure is required:

- A suitable buffer (for example, 660 feet for eagles, 300 feet for common raptors; 100 feet for passerines) shall be established by a qualified biologist around active nests and no construction activities within the buffer shall be allowed until a qualified biologist has determined that the nest is no longer active (that is, the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Encroachment into the buffer may occur at the discretion of a qualified biologist. Any encroachment into the buffer shall be monitored by a qualified biologist to determine whether nesting birds are being impacted.

PD BIO-2b: All pipes, hoses, culverts, or similar structures larger than 4 inches in diameter shall be closed, covered or capped to prevent burrowing owl entry upon arrival to the Project site. All similar structures greater than 4 inches in diameter may be capped or shall be inspected thoroughly for wildlife before the structure is buried, capped, used or moved at the Project site.

PD BIO-2c: Project facility lighting shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not extend below the shields.

PD BIO-2d: Rodenticides shall not be used at the Project site. If rodent control is required to minimize impacts on adjacent agricultural operations, non-chemical methods will be employed.

PD BIO-3: Reduce Bird Electrocutions and Collisions with Power Lines

The Applicant will ensure that new transmission lines and associated equipment will be properly fitted with wildlife protective devices to isolate and insulate structures to prevent injury or mortality of birds, to the extent feasible. Protective measures shall consider the guidelines provided in *Suggested Practices for Avian Protection on Power Lines, The State of the Art in 2006* (APLIC 2006) and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012), or the current Avian Power Line Interaction Committee guidelines in place at the time the transmission lines are installed, and will include insulating hardware or conductors against simultaneous contact, using poles that minimize impacts on birds, and increasing the visibility of conductors or wires to prevent or minimize bird collisions.

4.4.5.1 Species-specific Avoidance, Minimization, and Mitigation Measures

PD BIO-4: Crotch's Bumble Bee Preconstruction Survey

Preconstruction surveys for Crotch's bumble bee shall be performed in all suitable habitat within the Project disturbance area and a 50-foot buffer around it by a qualified biologist within 2 weeks prior to

the start of construction. Surveys will include a minimum of two survey efforts which shall not occur on sequential days. The surveys will be conducted in weather conditions suitable for surveys as outlined in CDFW's *Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species* (CDFW 2023). The purpose of the preconstruction survey will be to identify individuals, active nest colonies, and associated floral resources outside of permanent and temporary impact areas that could be avoided by construction personnel.

If an individual Crotch's bumble bee is detected within 50 feet of Project activity, a qualified biologist or biological monitor will be onsite during any ground disturbance (e.g., earthmoving, excavation, trenching) and/or vegetation removal activities that occur when Crotch's bumble bee are present within the activity footprint. A 25-foot no-disturbance buffer will be implemented around Crotch's bumble bee individuals within the area and monitored until it leaves the area on its own.

If an active nest colony is found, a 50-foot no-work buffer will be implemented to protect the active nest and floral resources. Construction activities will not occur within the no-work buffer until the colony is no longer active (that is, no bees are seen flying in or out of the nest for three consecutive days, indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony). If a 50-foot buffer around the nest cannot be maintained, the Applicant will consult with CDFW about alternative protective measures that are sufficient to minimize the risk to the active colony nest.

~~**PD BIO-5: Burrowing Owl Preconstruction Survey**~~

~~Preconstruction surveys shall be performed in all suitable habitat areas in the Project disturbance area and 500 feet (approximately 150 meters) around the Project disturbance area by a qualified biologist no less than 14 days prior to initiation of ground disturbing activities, including vegetation clearing. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. If the work activities halt for a period of 14 days or more, the survey would need to be conducted again prior to the continuation of site activities.~~

~~If burrowing owls are detected within the Project disturbance area or within 500 feet (approximately 150 meters) during the preconstruction surveys, a Project-specific mitigation plan shall be prepared for the CEC and CDFW review, approval, and implementation to protect burrowing owl and their nest sites. As defined in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), buffer size is dependent upon time of year and level of disturbance at the Project site. Depending on the level of disturbance, a smaller buffer may be established in consultation with CEC and CDFW. The burrowing owl survey may be conducted in conjunction with the preconstruction nesting bird survey, if timing is appropriate.~~

PD BIO-5: Burrowing Owl

The following measures will be implemented to avoid and minimize impacts of the Project on burrowing owl:

PD BIO-5a: Burrowing Owl Preconstruction Surveys

The Applicant will retain qualified wildlife biologists (experienced with burrowing owl surveys including burrowing owl identification and behaviors) to conduct focused surveys preconstruction surveys for burrowing owl within all suitable habitat areas the Project disturbance area, including the Project site, generation tie (gen-tie) corridor, and gen-tie laydown area, and 500 feet (approximately 150 meters) around the Project disturbance area, where accessible, no more than 14 days prior to initiation of ground disturbing activities (i.e., vegetation removal, grading, excavation, etc.). A minimum of two surveys will be conducted, with the first survey no more than 14 days prior to initial construction activities and the second survey conducted no more than 2 days prior to initial construction activities. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. The preconstruction surveys will be consistent with the guidelines provided in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). If the work activities halt for a period of 14 days or more, the survey would need to be conducted again prior to the continuation of site activities. The burrowing owl survey may be conducted in conjunction with other required preconstruction survey, if timing is appropriate.

If no burrowing owl or their sign (i.e., pellets, prey remains, whitewash, etc.) is observed during the preconstruction surveys, construction may continue as planned and no further action is required.

If the qualified biologists detect burrowing owl or their sign during the preconstruction surveys, then an appropriately sized avoidance buffer will be implemented dependent on the time of year and level of disturbance at the Project site as defined in PD BIO-5b.

Once preconstruction surveys have been completed, a preconstruction survey report will be submitted to the CEC and CDFW within 14 days. The preconstruction survey report will outline the survey methodology including the area relative to the Project disturbance area and a description of the findings including, but not limited to, number of owls or nesting pairs, locations, number of burrows being used, signs, and description of their behavior.

PD BIO-5b: Burrowing Owl Burrow Avoidance Buffers

If a burrowing owl is observed within the Project disturbance area or survey buffer during preconstruction surveys, or if burrowing owls arrive on site after construction activities commence, these active occupied burrows shall be designated as an environmentally sensitive area, protected, and have appropriately sized avoidance buffers established around them by the qualified biologist during Project construction activities. An active occupied burrow is defined as those burrows that are either currently occupied by burrowing owl or burrows where burrowing owl were seen during the pre-construction surveys. No work would occur within the designated environmentally sensitive area around active occupied burrows.

The Project shall implement activity avoidance buffers (Table 3-1) in the vicinity of active occupied burrows during construction and any ground-disturbing operations activities as shown in **Error! Reference source not found.**~~Table 3-1~~. Please refer to Table Error! No text of specified style in document.**-7**~~Table 3-2~~ for typical Project activities and their disturbance levels.

Table Error! No text of specified style in document.-61. Activity Buffer Distance for Active Occupied Burrows

Time of Year	Buffer Distance (meter) and Level of Disturbance			
	Minimal	Low	Moderate	High
Standard Buffer				
Feb 1 – April 15	0	100	200	300
Apr 16 – Aug 31	0	75	100	250
Aug 31 – Jan 31	0	35	50	100
Minimum Temporary Buffer[1/]				
Feb 1 – April 15	0	30	90	150
Apr 16 – Aug 31	0	25	65	90
Aug 31 – Jan 31	0	20	35	50

1/ Requires approval of the qualified biologist, and other conditions may apply, including, but not limited to, installation of visual and/or sound barriers, other minimization measures, and enforcement of increase in buffer from Minimum to Standard as soon as activity is complete.

An avoidance buffer around active occupied burrows may be reduced to the minimum temporary buffer if the qualified biologist verifies through noninvasive methods that either (1) the owls have not begun egg laying and incubation, or (2) juveniles from the occupied burrows are capable of independent survival (i.e., they are foraging independently and are not dependent on the natal burrow). If burrowing owls have independently left the active occupied burrow for at least 1 week, these burrows would be reclassified as inactive occupied burrows.

Inactive occupied burrows are those burrows which only show burrowing owl sign or were identified as being occupied during prior protocol level burrowing owl surveys but are not currently occupied by burrowing owl as determined during preconstruction surveys. Inactive occupied burrows will be avoided by implementing a 5-meter buffer around the burrow entrance, this buffer can be modified in coordination with the qualified biologist based on orientation and location of the burrow, proposed construction activities in the vicinity of it, and similar. Activities that do not disturb the ground, such as vegetation removal and vehicular traffic on existing roads, will generally have a smaller avoidance buffer implemented around inactive occupied burrows.

PD BIO-5c: Burrows With No Sign

Burrows within the Project disturbance area that have not had historic occupancy and/or show no burrowing owl sign during the 2024-2025 breeding and non-breeding season protocol surveys, as well as during preconstruction surveys, may be plugged or excavated prior to or during construction. Avoidance buffers will not be implemented around these burrows.

Burrowing owls or their sign have not been documented in the Project disturbance area; as such, the Applicant is not requesting incidental take authorization for burrowing owl. The Applicant is proposing PD BIO-5, which includes preconstruction surveys and avoidance of burrowing owls to ensure that take, as defined by the California Fish and Game Code, will not occur as a result of Project activities.

Should burrowing owls be documented during preconstruction surveys and avoidance, as defined by PD BIO-5, is not feasible, and it is determined the Project is likely to directly impact or substantially

indirectly impact the burrowing owls such that take could occur, the Applicant will coordinate with the CEC and CDFW to obtain incidental take authorization.

Table Error! No text of specified style in document.**-72. Typical Project Activities and Their Disturbance Levels**

Project Phase	Construction Activity	Intensity	Disturbance Level
Preconstruction	Site Visits	Short-duration, on foot, driving on established roads, quiet	Minimal
	Environmental Resource Surveys and Monitoring	Short-duration, on foot, driving on established roads, quiet	Minimal
	Activity Buffer Staking and Flagging	Short-duration, on foot, driving off-road after wildlife surveys, quiet	Minimal
	Civil Survey, Staking, and Flagging	Short-duration, on foot, driving off-road after wildlife surveys, quiet	Minimal
	Geotechnical Testing	Short-duration, on foot, driving off-road after wildlife surveys, quiet	Low
Site Preparation	Environmental Monitoring	Short-duration, passive observation of natural resources conducted by trained environmental field professionals on foot and in vehicles	Minimal
	Vegetation Mowing (4+ inches)	Mowing well above the ground surface to de-bulk grassland, cropland, or weedy vegetation, single pass, short duration in any single location	Moderate
	Vegetation Mowing (0-4 inches)	Mowing of vegetation very close to the ground surface, single pass, short duration in any single location, low to moderate soil disturbance, noise, and vibration	High
	Woody Vegetation Removal and Site Grubbing	Removal, chipping, and grubbing of soils to remove woody bulk, medium duration, targeted in locations with high woody vegetation content, extensive soil disturbance, noise, and vibration	High
	Site Grading	Movement of soil and recontouring of site topography, medium duration, may be targeted in localized areas, extensive soil disturbance, noise, and vibration	High
	Best Management Practices (BMP) Installation (Hand Tools)	Short-duration, on foot, driving on established roads, quiet	Low
	BMP Installation (Light Machinery)	Short-duration, using light equipment, driving on established roads and offroad	Low
	BMP Installation (Heavy Machinery)	Short- to moderate-duration, using heavy equipment, driving on established roads and offroad, extensive soil disturbance, noise, and vibration	High
	Security Fence Installation	Shallow foundation excavation, concrete pouring, and post establishment, and laying fencing fabric, short duration in any one location	Low
	Road Compaction	Use of graders and rollers, extensive noise, and vibration, moderate duration in any one location	High

Project Phase	Construction Activity	Intensity	Disturbance Level
	Equipment and Material Laydown	Movement and staging of equipment and materials, extensive noise and vibration, moderate duration in a few locations	Moderate
	Cable Trenching (Ditch Witch)	Short- to moderate-duration, using heavy equipment, driving on established roads and offroad, moderate soil disturbance, noise, and vibration	Moderate
Major Equipment Installation, Site Cleanup, Restoration	Cable/Fiber Trenching (Excavate Full Trench)	Use of heavy equipment, extensive disturbance, noise, and vibration, moderate duration in any one location	High
	Trenchless Installation of Cables/Fiber at Entrance and Exit Pits (Horizontal Directional Drill, Jack-and-Bore, and similar)	Use of heavy equipment, extensive disturbance, noise, and vibration, moderate duration at entrance and exit pits	High
	Trenchless Installation of Cables/Fiber along Underground Alignment	Below ground soil disturbance, limited noise and vibration. Vehicular travel along alignment.	Low
	Pile Driving	Short- to moderate-duration, using heavy equipment, extensive soil disturbance, noise, and vibration	Moderate - High
	Well Drilling	Short duration, using drill rig to develop groundwater supply well (if required)	Moderate
	BESS Delivery and Interconnection	Movement and staging of equipment and materials, extensive noise and vibration, moderate-duration in a one location	Moderate
	Gen-tie and Fiber Optic Cable Pole Foundation Excavation	Short- to moderate-duration, using heavy equipment, extensive soil disturbance, noise, and vibration	High
	Water Truck Use	Short-duration, using light equipment, driving on established roads	Low
	Hydroseeding	Short-duration, using light equipment, driving on established roads and offroad	Low
	Broadcast Seeding	Short-duration, on foot, driving on established roads, quiet	Minimal
O&M	Inspections	Short-duration, driving on established roads, quiet no ground disturbance	Low
	General Maintenance of Equipment	Short-duration, using light equipment, driving on established roads and offroad	Low
	Equipment Replacement	Short-duration, possibly heavy equipment, driving on established roads and offroad	Moderate - High
	Weed Management (Chemical Controls)	Short to moderate-duration, targeted herbicide application for noxious/invasive weeds, on foot in any one location, using light equipment, driving on established roads and offroad	Low - Moderate
	Ground-disturbing Activities	Use of heavy equipment, extensive disturbance, noise, and vibration, moderate-duration in any one location	Moderate - High
	Vegetation Mowing (4+in)	Mowing well above the ground surface to de-bulk grassland, cropland, or weedy vegetation, single pass, short duration in any single location	Moderate

Project Phase	Construction Activity	Intensity	Disturbance Level
	Vegetation Mowing (0-4in)	Mowing of vegetation very close to the ground surface, single pass, short duration in any single location, low to moderate soil disturbance, noise, and vibration	High
	Weed Management (Mechanical Controls)	Weed whacking very close to the ground or hoeing, hand pulling to remove noxious/invasive weed roots, short duration on foot in any one location, using light equipment, low to moderate soil disturbance, noise, and vibration, driving on established roads and offroad	Low - Moderate

PD BIO-6: Swainson's Hawk

The following measures will be implemented to avoid and minimize impacts of the Project on Swainson's hawk:

PD BIO-6a: The Applicant will, to the maximum extent feasible, limit construction and vegetation removal with 0.25 mile of known nests, to outside of the nesting season for Swainson's Hawk, between September 15 and March 1, to avoid impacting nesting individuals.

PD BIO-6b: If construction will occur during the breeding season for Swainson's Hawk, March 1 through September 15, the Project Proponent will retain qualified wildlife biologists (experienced with raptor identification and behaviors) to conduct focused surveys for Swainson's hawk nesting before construction begins. Survey methodology will follow the Swainson's Hawk Technical Advisory Committee's survey methodology (Swainson's Hawk Technical Advisory Committee 2000). Focused surveys for Swainson's hawk nesting will be conducted in the proposed disturbance area and in a buffer area of 0.25 mile around the disturbance area. The portions of the Swainson's hawk survey buffer area containing unsuitable nesting habitat and/or with an obstructed line of sight to the disturbance area will not be surveyed. No active Swainson's hawk nest trees will be removed during the nesting season.

If the qualified wildlife biologists find an active Swainson's hawk, a 0.25-mile no-work buffer will be implemented between construction activities and the active nest(s) until it has been determined that the young have fledged or as otherwise approved through consultation with CDFW. The wildlife biologists will mark the no-work buffer with stakes and signs and will check the location to ensure that the signs are in place and the buffer is being maintained. No work will be authorized within the buffer during the breeding season, except for vehicle travel.

If a 0.25-mile buffer around the nest cannot be maintained, the Applicant and a qualified wildlife biologist will consult with CDFW about alternative protective measures that are sufficient to minimize the risk of nest disturbance, such as a reduced buffer with full-time nest monitoring by a qualified wildlife biologist. If nesting SWHA exhibit agitated behavior indicating stress, the qualified Biological Monitor will have the authority to halt construction in that area until the Applicant has consulted with CDFW to determine if additional measures are required.

PD BIO-7: Notification to the California Natural Diversity Database. If any special status species are detected during Project surveys or during Project activities, the Applicant shall submit CNDDB Field Survey Forms to CDFW in the manner described at the CNDDB website (https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data) within 5 working days of the sightings.

PD BIO-8: Prevent the Spread of Invasive Plants

To minimize the risk of introducing new invasive plants to the Project site and adjacent properties during construction, operations and maintenance, and decommissioning, all construction vehicles and equipment must be inspected and free of mud, seeds, and other vegetation debris before use in the Project site. Prior to accessing the Project site, construction equipment will be inspected and cleaned if necessary. Any plant materials (such as hay bales or wattles) or other erosion control materials brought onto the Project site will be certified weed free. During construction, operations and maintenance, and decommissioning, soil disturbance will be limited to the extent feasible to prevent the spread of invasive plants. Following construction, temporarily disturbed areas will be revegetated following the guidance of a draft revegetation plan to minimize the potential for the spread of invasive plants.

4.4.5.2 Additional Compensatory Mitigation[20]

The Applicant is not proposing additional compensatory mitigation for the proposed Project for the following reasons:

- Following the completion of Project construction, all temporarily impacted areas will be revegetated with an application of native seed mix to promote passive restoration of areas to pre-Project conditions.
- The Project will result in 15.9 acres of permanent impacts on agricultural lands that provide low-quality habitat for the majority of special status species that occur in the vicinity of the Project. The Applicant is proposing mitigation impacts associated with conversion of farmland by securing at least 60.5 acres of protected agricultural mitigation lands within Solano County in coordination with Solano Land Trust. In addition, the protected agricultural mitigation lands will result in a much greater 1:1 mitigation ratio for loss of Swainson's hawk foraging habitat as a result of the Project.
- In addition to these permanent impacts, 21.6 acres of orchard lands, which are not suitable habitat for the special status species as discussed in Sections 4.4.3.5 and 4.4.3.6, will be permanently removed from the gen-tie corridor and laydown area and, following construction of the gen-tie line, will be available for use and is anticipated to benefit the special status species that may occur in the Project vicinity. The result is a net gain of 5.7 acres of suitable habitat land as a result of Project construction.

[20] Appendix B (g) (13) (F) (ii)

4.4.6 Laws, Ordinances, Regulations, and Standards[21]

The following section includes the federal, state, and local laws, ordinances, regulations, and standards as they apply to biological resources in the Project area. The laws, ordinances, regulations, and standards described were used to determine how impacts to biological resources should be evaluated.

4.4.6.1 Federal

Federal Endangered Species Act (16 United States Code Section 1531 et seq.). Section 9 prohibits the "take" of species listed as endangered or threatened under the federal ESA. "Take" is defined by regulation as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" is further defined by the USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by the USFWS as intentional or negligent actions that create the likelihood of injury to listed species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Although "take" of a listed species is prohibited under ESA Section 9, incidental take authorization may be obtained pursuant to ESA Section 7 or Section 10. Species that are not listed are not protected by the ESA, even if they are candidates for listing; however, the USFWS advises that a candidate species (as well as species of concern) could be elevated to listed status at any time, and applicants, therefore, should regard these species with special consideration.

MBTA (16 United States Code Section 703 - 711) protects all migratory birds, including nests and eggs.

BGEPA (16 United States Code Section 668) specifically protects bald and golden eagles from harm or trade in parts of these species.

Sections 401 and 404 of the CWA prohibits the discharge of dredged or fill material into WOTUS, including wetlands, without a permit from the USACE. The definition of WOTUS includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations 328.3 7b). Under Section 10 of the Rivers and Harbors Act of 1899, the USACE has the authority to regulate the navigable capacity of any WOTUS. Under the CWA, it is not lawful to excavate or fill, or in any manner alter or modify the course, location, condition, or capacity of…any navigable water of the United States."

All Section 404 CWA permit actions require water quality certification or a waiver pursuant to Section 401 of the CWA. This authority has been delegated by the U.S. Environmental Protection Agency to the

[21] Appendix B (i) (1) (A)

California SWRCB, who delegates regional authority to the Regional Water Quality Control Boards (RWQCBs).

4.4.6.2 State

California ESA (Fish and Game Code Section 2050 et seq.) states that species listed as threatened or endangered in California cannot be "taken" or harmed unless such "take" is authorized pursuant to an incidental take permit. "Take" currently is defined as to do or attempt to do the following: hunt, pursue, catch, capture, or kill a member of a listed species.

California Code of Regulations (Sections 670.2 and 670.5). California SSC is a category conferred by the CDFW to fish and wildlife species that meet the state definition of threatened or endangered, but have not been formally listed (e.g., federally or state listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered "special status" for the purposes of the CEQA analysis.

California Fish and Game Code Section 3511 describes bird species, primarily raptors, that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements.

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

California Fish and Game Code Section 3503.5 protects all birds of prey and their eggs and nests.

California Fish and Game Code Section 3513 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

California Fish and Game Code Sections 4700, 5050, and 5515 list mammal, amphibian, and reptile species that are fully protected in California.

California Fish and Game Code Section 1900 et seq., the California Native Plant Protection Act, protects rare plants listed as threatened, endangered, and rare.

California Fish and Game Code Section 1600 et seq. prohibits alteration of any stream or lake, including intermittent and seasonal channels and many artificial channels, without a Streambed Alteration Agreement from CDFW. This applies to any channel modifications that will be required to meet drainage, transportation, or flood control objectives of a project.

CEQA (Public Resources Code Section 15380) defines "rare" in a broader sense than the California ESA and CDFW definitions of threatened, endangered, or SSC. Under this definition, the CDFW can request additional consideration of species not otherwise protected. CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.

Section 13263 of the Porter-Cologne Water Quality Control Act authorizes the RWQCB to regulate discharges of waste and fill material to waters of the State, including "isolated" waters and wetlands,

through the issuance of water quality certifications or waste discharge requirements (WDR). The RWQCB typically issues WDRs for projects undergoing an Individual Section 404/10 process pursuant to USACE and USFWS requirements. Since WDRs must be approved by the elected board, public outreach is also a component of WDR permitting activity.

Native Plant Act of 1973 (Fish and Game Code Sections 1900–1913) includes provisions that prohibit the taking of endangered or rare native plants. The CDFW administers the Native Plant Protection Act of 1973 and generally regards as rare many plant species included on CRPR 1A, 1B, 2A, and 2B of the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project. Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by the CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

California Food and Agriculture Code 403 states that the California Department of Food and Agriculture (CDFA) shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds. CDFA Code Section 5004 defines a noxious weed as any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate.

4.4.6.3 Local

Solano County General Plan

The Solano County General Plan (2008) encompasses all unincorporated areas of Solano County, which totals approximately 782 square miles (86 percent of Solano County). This includes all areas outside of seven incorporated cities: Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo. The Solano County General Plan, Chapter 4, *Resources*, has multiple policies related to biological resources:

> ***Policy 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.*
>
> ***Policy 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.*
>
> ***Policy 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.*
>
> ***Policy RS.P-71****: Ensure that land use activities and development occur in a manner that minimizes the impact of earth disturbance, erosion, and surface runoff pollutants on water quality.*

The Solano Multi-Species Habitat Conservation Plan (2012) establishes a framework for complying with federal and state regulations for endangered species undertaken by or under the permitting authority/control of the Habitat Conservation Plan participants within the plan area. Although the Project is not considered a covered activity under the Solano Multi-Species Habitat Conservation Plan

it is considered to be the best available information when considering impacts of proposed projects on the full range of protected wildlife, plants, and habitats that occur in Solano County. Additionally, the Solano Multi-Species Habitat Conservation Plan development has been guided by a collaborative effort among several local, state, and federal agencies intended to provide an effective framework to protect, enhance, and restore natural resources in the County and enable local projects to comply with state and federal regulatory requirements. The implementation of the avoidance and minimization measures **PD BIO-1** through **PD BIO-7**, and the restoration of temporarily disturbed areas, is consistent with the measures proposed in the Solano Multi-Species Habitat Conservation Plan. Thus, impacts to local policies will be less than significant with the proposed PD Measures incorporated.

City of Vacaville General Plan

The City's General Plan specifies a number of policies or actions to address concerns related to biological resources. The specific policies and implementation programs of the General Plan, Conservation and Open Space Element, are provided below (City of Vacaville 2015):

> ***Goal COS-1:*** *Protect and enhance habitat for sensitive species and natural communities.*
>
> ***Policy COS-P1.5****: Require new development proposals to provide baseline assessments prepared by qualified biologists. The assessment shall contain sufficient detail to characterize the resources on, and adjacent to, the development site. The assessment shall also identify the presence of important and sensitive resources, such as wetlands, riparian habitats, and rare, threatened, or endangered species affected by the development.*
>
> ***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-P1.12****: 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.*
>
> ***Policy COS-P1.13:*** *Require that new development avoid the loss of special-status bat species as feasible.*

4.4.7 Agencies and Agency Contacts[22, 23]

Agencies and agency contacts relative to biological resources for the Project are provided in Table 4.4-8~~Table 4.4-6~~. Appendix 4.4-E includes copies of preliminary correspondence between the Applicant and state and federal resource agencies regarding whether federal or state permits from other agencies will be required for the Project.

Table 4.4-~~8~~6. Agency Contacts for Biological Resources[24]

Agency	Contact	Permit/Issue
U.S. Fish and Wildlife Service (USFWS)	Ryan Olah, USFWS Sacramento Fish and Wildlife Office	Endangered Species Act (ESA)
California Department of Fish and Wildlife (CDFW)	Brenda Blinn, Bay Delta, Region 3	California ESA, Incidental Take Permit, Lake and Streambed Alteration Agreement
U.S. Army Corps of Engineers	Mary Pakenham-Walsh, Chief, CA Delta Section	Clean Water Act Section 404
Regional Water Quality Control Board (RWQCB)	Stephanie Tadlock Senior Environmental Scientist Stephanie.Tadlock@waterboards.ca.gov	Clean Water Act Section 401, RWQCB Waste Discharge Requirement

4.4.8 Required Permits and Permitting Schedule[25, 26]

No state or federal permits will be required because impacts to biological resources will be avoided through implementation of the proposed PD Measures.

4.4.9 References[27]

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[23] Appendix B (i) (2)
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