Appendix D

Biological Resources Assessment

BIOLOGICAL RESOURCES ASSESSMENT
for the
NORTH CENTRAL VALLEY ENERGY CENTER PROJECT
SAN JOAQUIN COUNTY, CALIFORNIA

Prepared for:

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Introduction

Dudek has prepared this Biological Resources Assessment for North Central Valley Energy Storage, LLC's North Central Valley Energy Center ("Project") in San Joaquin County, California (Figure 1, Project Location). The purpose of this Biological Resources Assessment is to identify and characterize existing on-site biological resources, with particular focus on the potential of the site to support special-status plant and wildlife species and other sensitive resources, such as wetlands and other aquatic features, and wildlife movement corridors. This Biological Resources Assessment also evaluates and provides a summary of potential impacts on these resources as a result of eventual implementation of the Project. The existing conditions within the project site for the Bellota Substation expansion by Pacific Gas & Electric (PG&E) are described in Appendix F to this document.

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1 Site Location

The approximately 62.90-acre Project Site is in unincorporated San Joaquin County, approximately 15 miles east of the City of Stockton, California, and approximately 1.5 miles south of State Route 26. The Project Site is located adjacent to the western boundary of the Pacific Gas and Electric ("PG&E") Bellota substation along Flood Road (Figure 2, Project Site). The site is in Sections 19 and 20 of Township 2 North and Range 9 East of the "Linden, CA" U.S. Geological Survey ("USGS") 7.5-minute quadrangle. The approximate center of the Project Site corresponds to 38°01′52.91″ north latitude and 121°01′78.36″ west longitude.

The Project Site is located on the eastern edge of the San Joaquin Valley geographic subdivision of the California Floristic Province (Jepson Flora Project 2020), where croplands of the valley floor transition to the rangelands of the inner Sierra Ranges to the west. Elevations on the Project Site range from 135 to 175 feet above mean sea level ("amsl"), with low-lying hills and drainages that bisect the property from northeast to southwest. The region surrounding the Project Site receives approximately 14 inches of precipitation annually. Average temperatures range from approximate 49°F to 75°F (WRCC 2020).

Project Site access is currently provided via Flood Road frontage on the northern border of the Project Site. The Project Site is surrounded to the west and south with similarly zoned agricultural lands with active row crop farming operations. Additional livestock operations are located north of the Project Site, and to the east and adjacent to the Project Site is the PG&E Bellota substation. There are also several residences located near the Project Site. The natural communities that were historically present have been substantially altered by grazing and agricultural production activities.

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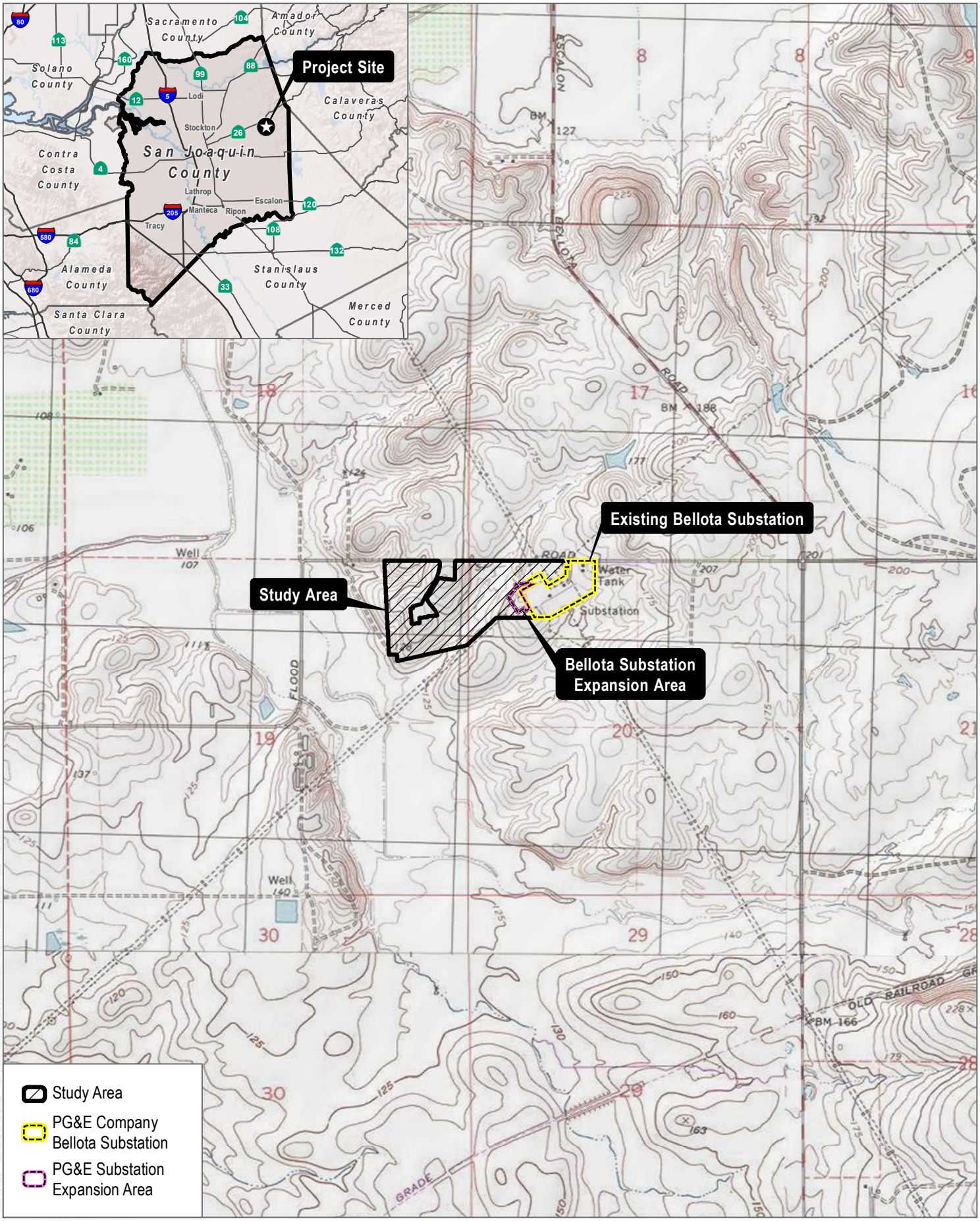

SOURCE: USGS 7.5-Minute Series Linden Quadrangle

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FIGURE 1

Project Location

North Central Valley Energy Storage Project

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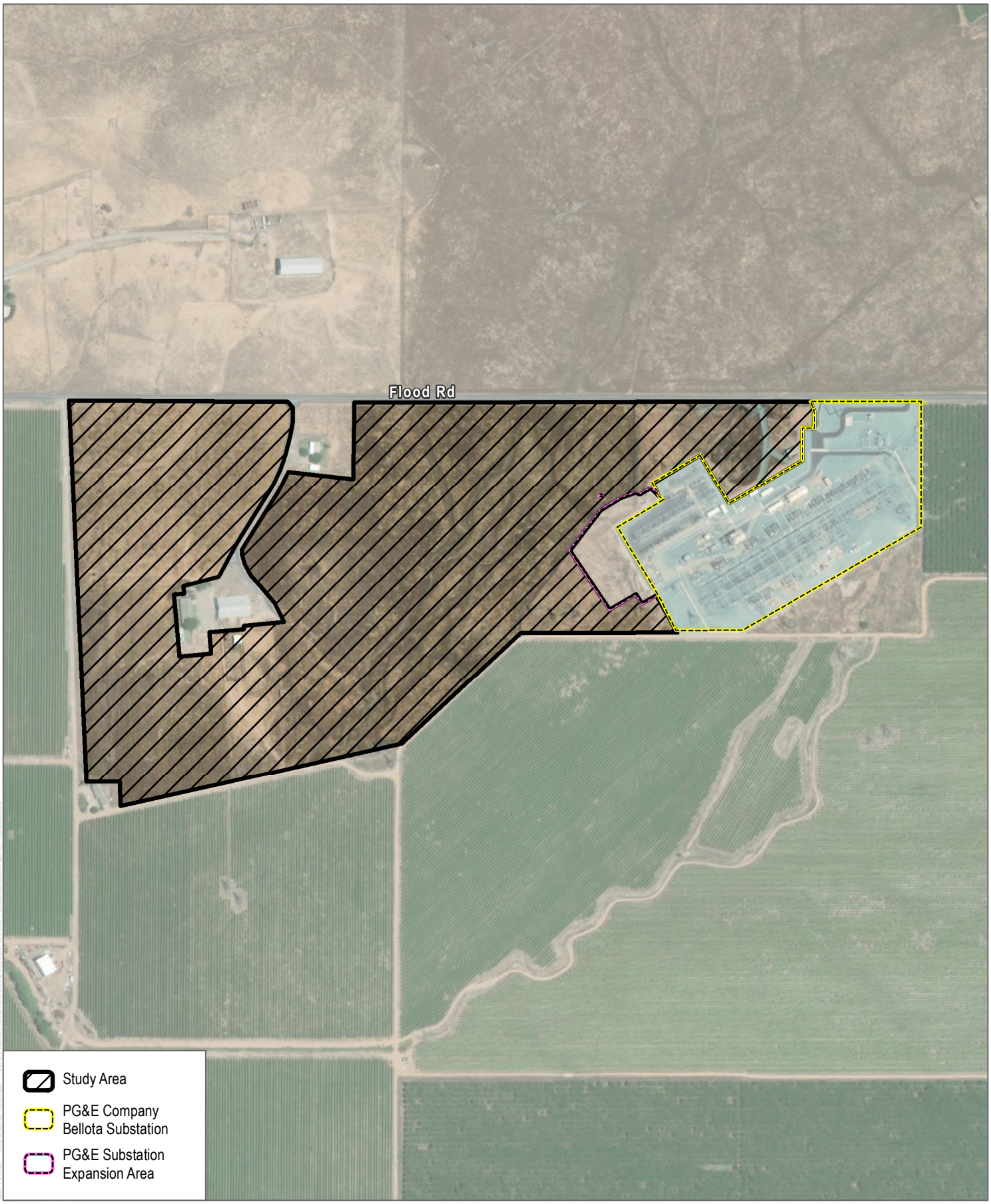

SOURCE: San Joaquin County 2017; ESRI/DigitalGlobe/Vivid Maxar 8/2019

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FIGURE 2

Project Site

North Central Valley Energy Storage Project

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2 Proposed Project

North Central Valley Energy Storage, LLC proposes to construct and operate the North Central Valley Energy Center Project on approximately 6 acres within the 62.90-acre Project Site to store 528 megawatt-hours (132 MW) of energy. The Project Site includes all or part of five Assessor's parcels that have a combined acreage of approximately 84.14 acres (Table 1). Two parcels are privately owned, and three parcels are owned by PG&E.

Table 1. Land Ownership

APNs	Ownership	Acreage
09310024	Private	39.55
09310020	Private	17.73
09310004	PG&E	13.26
09310005	PG&E	10.00
09310016	PG&E	3.60
Total		**84.14***

*Includes the PG&E Bellota Substation and other lands not a part of this project, as well as the PG&E Bellota Substation expansion area which is discussed separately in Appendix F.

The Project would consist of a 132-megawatt by 4-hour battery energy storage system ("BESS") with associated on-site switchyard, inverters, fencing, roads, and supervisory control and data acquisition ("SCADA") system. The Project also includes a 115-kilovolt overhead generation transmission line, which would extend to the adjacent PG&E Bellota substation, and an expansion of the existing substation footprint to accommodate the proposed BESS. The baseline conditions for the substation expansion site, as well as the various measures that would be taken by PG&E to avoid and minimize effects on biological resources are described in Appendix F.

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3 Regulatory Setting

3.1 Federal

Federal Endangered Species Act

The federal Endangered Species Act ("FESA") prohibits the taking, possession, sale, or transport of endangered species. Pursuant to the requirements of FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present on the project site, and determine the extent to which the project would potentially have an effect on such species. In addition, federal agencies are required to determine whether a project is likely to jeopardize the continued existence of any species proposed to be listed under FESA, or if it would result in the destruction or adverse modification of critical habitat designated for such species (16 USC 1536[3]–[4]). Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain authorization from the National Marine Fisheries Service (for marine fish species) and/or U.S. Fish and Wildlife Service ("USFWS") (for all other species) through either FESA Section 7 (interagency consultation) or FESA Section 10(a) (incidental take permit), depending on whether the federal government is involved in permitting or funding the project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Section 10.13 of the Code of Federal Regulations. The Migratory Bird Treaty Act is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50, Section 20 of the Code of Federal Regulations. The Migratory Bird Treaty Act was amended in 1972 to include protection for migratory birds of prey (raptors). In late December 2017, the Department of Interior issued an opinion that interprets the above prohibitions as only applying to direct and purposeful actions the intent of which is to kill, take, or harm migratory birds; their eggs; or their active nests. Incidental take of birds, eggs, or nests that are not the purpose of such an action, even if there are direct and foreseeable results, are not prohibited. However, that opinion was struck down by a U.S. District Court in August 2020, reverting to the prior interpretation of the Migratory Bird Treaty Act.

Clean Water Act – Section 404

The objective of the Clean Water Act ("CWA") is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under Section 404 of the CWA, the U.S. Army Corps of Engineers ("ACOE") has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. ACOE implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland values or function.

Clean Water Act – Section 401

The State Water Resources Control Board has authority over wetlands through CWA Section, as well as the Porter–Cologne Water Quality Control Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that

the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. The Central Valley Regional Water Quality Control Board ("RWQCB") has authority for Section 401 compliance on the Project Site. A request for certification is submitted to the RWQCB at the same time that an application is filed with ACOE.

3.2 State

California Endangered Species Act

Under the California Endangered Species Act ("CESA"), the California Fish and Game Commission has the responsibility of maintaining a list of threatened and endangered species. CESA prohibits the take of state-listed threatened or endangered animals and plants unless otherwise permitted pursuant to CESA. Species determined by the State of California to be candidates for listing as threatened or endangered are treated as if listed as threatened or endangered and are, therefore, protected from take. Pursuant to CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species, or candidate species, could be potentially impacted by that project.

California Department of Fish and Wildlife Special Plants

For the purposes of this analysis, special plant species are defined as plants that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies. These species fall into one or more of the following categories:

- Listed by the federal government under FESA or the State of California under CESA as endangered, threatened, or rare
- A candidate for federal or state listing as endangered or threatened
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation
- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California
- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats)
- Taxa considered to be "rare, threatened, or endangered in California" as defined by the California Department of Fish and Wildlife ("CDFW") and assigned a California Rare Plant Rank ("CRPR"). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, as follows:
    - CRPR 1A – Plants presumed extirpated in California and either rare or extinct elsewhere
    - CRPR 1B – Plants rare, threatened, or endangered in California and elsewhere
    - CRPR 2A – Plants presumed extirpated in California, but common elsewhere
    - CRPR 2B – Plants rare, threatened, or endangered in California, but more common elsewhere
    - CRPR 3 – Plants about which more information is needed (a review list)
    - CRPR 4 – Plants of limited distribution (a watch list)

Plants ranked as CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of California Environmental Quality Act ("CEQA") Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA review documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380, but these species may be evaluated on a case-by-case basis.

California Department of Fish and Wildlife Species of Special Concern

CDFW maintains a list of vertebrate animal species considered of "special concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. A Species of Special Concern ("SSC") is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

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

CDFW SSCs are typically addressed within the context of an environmental impact report or other document prepared pursuant to CEQA.

California Department of Fish and Wildlife Wetlands Protection Regulations

CDFW derives its authority to oversee activities that affect wetlands from state legislation. This authority includes California Fish and Game Code Sections 1600–1616 (Lake and Streambed Alteration Agreements), CESA (protection of state-listed species and their habitats, which could include wetlands), and the Keene–Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, CDFW asserts authority over wetlands within the state through any of the following: review and comment on ACOE Section 404 permits, review and comment on CEQA documents, preservation of state-listed species, or through Lake and Streambed Alteration Agreements.

California Department of Fish and Wildlife Sensitive Natural Communities

Sensitive natural communities are communities that have a limited distribution and are often vulnerable to the environmental effects of projects. These communities may or may not contain special-status species or their habitats. For purposes of this assessment, sensitive natural communities include vegetation communities listed in CDFW's California Natural Diversity Database ("CNDDB") and communities listed in the Natural Communities List with a rarity rank of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable). Additionally, all vegetation associations within the alliances with ranks of S1–S3 are considered sensitive habitats. CEQA requires that impacts to sensitive natural communities be evaluated and mitigated to the extent feasible.

California Fish and Game Code Section 1600 – Lake and Streambed Alteration Agreement

Under California Fish and Game Code Sections 1600–1616, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined as the "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit" (California Fish and Game Code Section 1601). In practice, CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

California Fish and Game Code – Sections 3503, 3511, 3513

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act.

California Fish and Game Code – Section 4150

California Fish and Game Code Section 4150 states that a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under Section 4150. All bat species occurring naturally in California are considered non-game mammals and are therefore prohibited from take, as stated in California Fish and Game Code Section 4150.

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act established the State Water Resources Control Board and the RWQCBs as the principal state agencies responsible for the protection of water quality in California. The Porter–Cologne Water Quality Control Act provides that "all discharges of waste into the waters of the state are privileges, not rights." Waters of the state are defined in Porter–Cologne Water Quality Control Act Section 13050(e) as "any surface water or groundwater, including saline waters, within the boundaries of the state." All dischargers are subject to regulation under the Porter–Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The Central Valley RWQCB (Region 5) has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction, including the Project Site.

California Environmental Quality Act

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been generally modeled after the definition in FESA and California Fish and Game Code Chapter 1.5 that addresses rare or endangered plants and animals. CEQA Guidelines Appendix G requires a lead agency to determine whether or not a project would "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service." CEQA Guidelines Section 15065 requires that a lead agency find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare, or threatened species."

4 Methods

Information regarding biological and potentially jurisdictional resources present within the Project Site was obtained through a review of pertinent literature, publicly available natural resource databases, and other information, as well as a biological field survey; all are described in detail below.

4.1 Literature and Database Review

Special-status biological resources present or potentially present on the Project Site were identified through a literature search using the following sources: USFWS Information for Planning and Consultation (IPaC) Trust Resource Report (USFWS 2020), CDFW's CNDDB (CDFW 2020), and the California Native Plant Society ("CNPS") online Inventory of Rare and Endangered Vascular Plants (CNPS 2020)(Attachment A, Database Queries). Dudek also reviewed current and historical aerial photography (Google Earth Pro 2020) to identify any potentially jurisdictional wetlands or other waters based on aerial signatures, and reviewed the U.S. Department of Agriculture's Web Soil Survey to identify soil types mapped on the Project Site (USDA 2020a).

Previous studies conducted within portions of the Project Site include an updated aquatic resources delineation (Dudek 2020) and a Biological Assessment of the PG&E Bellota substation (PG&E 2020).

4.2 Biological Field Surveys

Dudek wildlife biologist Anna Godinho performed a field survey of the approximately 62.90-acre Project Site on July 13, 2020. The field survey included identifying, characterizing, and documenting on-site vegetation communities and land cover types and an assessment, based on field conditions, of the potential for special-status plant and animal species to occur within the Project Site boundaries. The survey was conducted on foot to visually cover the entire Project Site. Field notes, ESRI Collector with an overlay of the property boundary and aquatic resources delineated by Dudek in 2018, and a Trimble Geo 7X GPS unit were used to map vegetation communities and record any sensitive biological resources while in the field. Representative site photographs are included in Attachment B, Photo Log.

All plant species encountered during the field surveys were identified to the lowest taxonomic group possible and recorded directly into a field notebook. Common and scientific names for plant species with a CRPR (formerly CNPS List) follow the CNPS online Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2020). Nomenclature for all other plant species observed on the site follow Jepson eFlora, which is based on *The Jepson Manual, Vascular Plants of California,* second edition (Jepson Flora Project 2020). Wildlife species detected during the field surveys by sight, calls, tracks, scat, or other signs were recorded directly into a field notebook. The site was scanned with and without binoculars to aid in the identification of wildlife. In addition to species detected during the surveys, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. Because the field survey was conducted outside the blooming period for special-status plant species potentially occurring on the site, and outside of the breeding season for special-status wildlife species potentially occurring on the site, focused protocol-level surveys for special-status species were not conducted.

Concurrently with the biological field survey, Ms. Godinho evaluated the potential for aquatic resources potentially under state and/or federal jurisdiction to occur within the additional areas added to the eastern portion of the Project Site. During the survey, Ms. Godinho updated Dudek's 2018 delineation as needed where conditions had

changed, and included new features in an updated aquatic resources delineation report (Dudek 2020). Potentially jurisdictional waters include the following:

- Waters of the United States, including wetlands, under the jurisdiction of ACOE pursuant to federal CWA Section 404
- Waters of the State, including wetlands, under the jurisdiction of the RWQCB pursuant to CWA Section 401 and the Porter-Cologne Water Quality Control Act
- Waters of the State under the jurisdiction of CDFW, pursuant to California Fish and Game Code Section 1602

Pursuant to the federal CWA, ACOE, and RWQCB, jurisdictional areas include those supporting all three wetlands criteria described in the ACOE Manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with the ACOE areas, but may also include isolated features that have evidence of surface water inundation pursuant to the state Porter-Cologne Water Quality Control Act. These areas generally support at least one of the three ACOE wetlands indicators but are considered isolated through the lack of surface water hydrology/connectivity downstream. The extent of CDFW regulated areas typically includes areas supporting a predominance of hydrophytic vegetation (i.e., 50% cover or greater) where associated with a stream channel.

5 Results

5.1 Site Description

Soils

According to the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (USDA 2020a), there is one soil type within the Project Site: Redding gravelly loam, 1% to 30% slopes, dry, major land resource area 17 (see Figure 3, Soils). The U.S. Department of Agriculture Natural Resources Conservation Service does not consider this soil type to be a hydric soil (USDA 2020a). Soils observed during the July 2020 survey were gravelly clay loam, which is consistent with this mapping.

Hydrology

The Project Site lies within the Eastern San Joaquin groundwater basin and the Mormon Slough Hydrologic Unit (HUC 180400030301) (Figure 4, Hydrologic Setting). Dudek identified a number of potential waters of the United States or state on the Project Site, which are discussed in Section 5.5, Wetlands and Other Waters. The hydrology within the Project Site has been substantially altered by agricultural land uses and associated activities such as leveling and re-directing surface flow. There is a system of drainages that bisect the Project Site from northeast to southwest. Surface runoff from the western portion of the site generally sheet flows off of the property to the west. Surface runoff from the eastern portion of the site generally drains southward via overland flow. Drainage appears to be conveyed into an agricultural canal to the southeast, via a culvert, and then connects to the Mormon Slough through a series of canals. The Mormon Slough drains into the San Joaquin River and, ultimately, San Francisco Bay, a traditional navigable water of the United States.

Vegetation Communities and Land Cover Types

One natural vegetation community and one terrestrial land cover type exist on the Project Site: annual grassland and developed/disturbed (Figure 5, Vegetation Communities and Land Cover Types). Aquatic land cover types, such as wetlands or other waters, are described in Section 5.5. Vegetation communities and land cover types present on the Project Site are summarized in Table 2 and described further in the following text.

Table 2. Vegetation Communities and Land Cover Types on the Project Site

Vegetation Community/Land Cover Type	Acreage
Annual Grassland	62.39
Developed/Disturbed	0.51
Total	**62.90**

Annual Grassland (62.39 acres). A majority of the Project Site is currently used for grazing and is dominated by annual non-native grasses including soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua),* and medusahead (*Elymus caput-medusae*). Other annual herbaceous species such as narrow tarplant (*Holocarpha virgata*) and turkey mullein (*Croton setiger*) also constitute a significant cover. Transmission towers and structures associated with grazing activities including property fencelines and watering troughs occur throughout the annual grassland.

Developed/Disturbed (0.51 acres). Developed areas are those that have been completely altered by human activities. Within the Project Site, this includes a livestock holding pen and related structures located centrally, an unpaved parking lot, portable restrooms, double-wide trailer, and human-made drainage associated with the adjacent PG&E Bellota substation. A human-made drainage was constructed in upland habitat to convey stormwater runoff from the PG&E Bellota substation. Vegetation is largely absent from these areas, and where present, consists of non-native annual species similar to those described for annual grassland.

Common Plant and Wildlife Species Observed

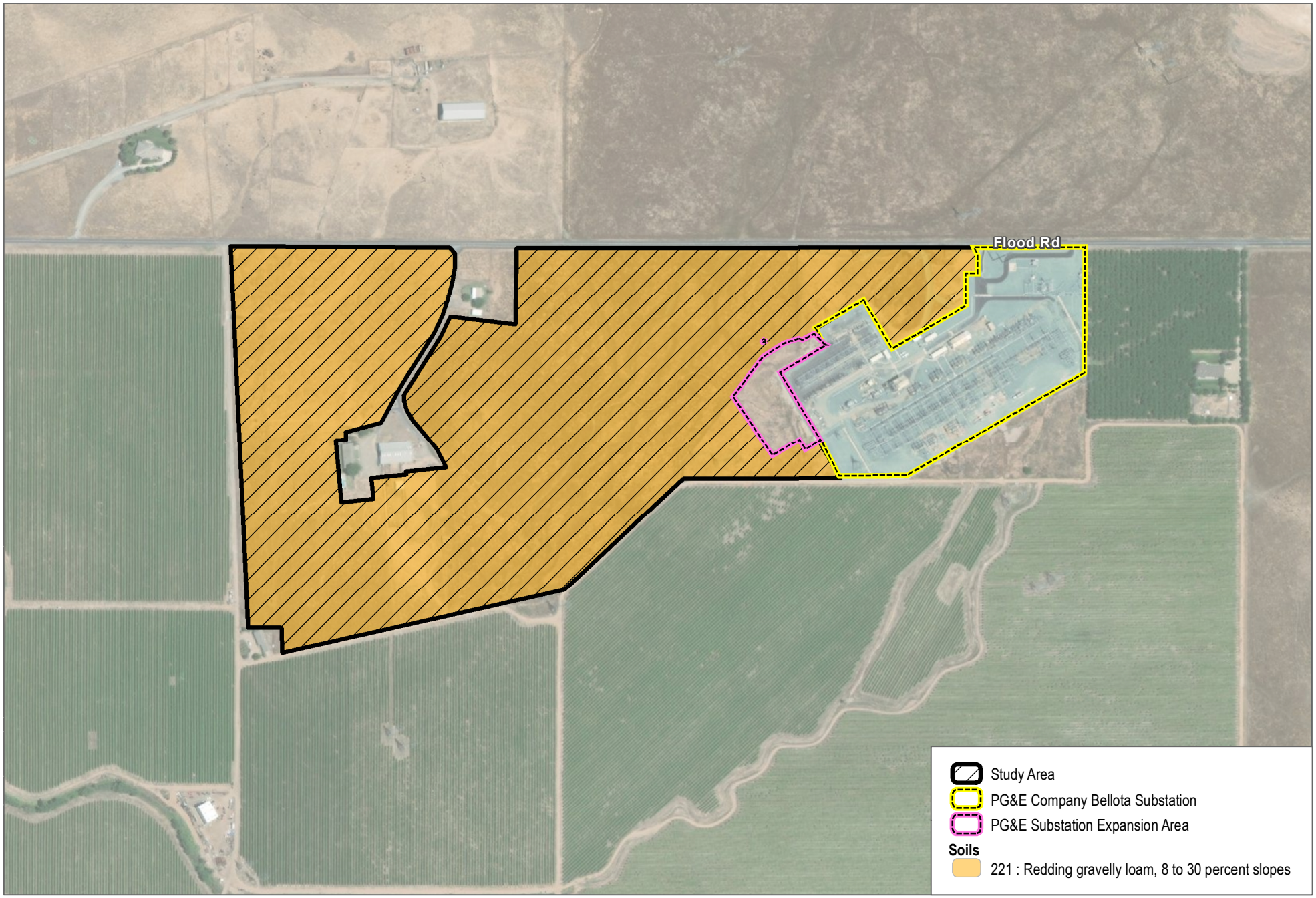
A total of 30 species of native or naturalized plants, 12 native (40%) and 18 non-native (60%), was recorded on the site during the July 2020 field survey (Attachment C, List of Species Observed on Site). Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California as listed on Jepson eFlora (Jepson Flora Project 2020), and common names follow the USDA NRCS Plants Checklist (USDA 2020c). The field assessment was conducted late in the growing season, at a time when many plants are not evident and identifiable. As such, floristic surveys conducted at the appropriate time of the growing season would likely yield a greater number of identifiable species.

The Dudek biologist directly observed, or documented via scat, sign, or call, 10 wildlife species on the Project Site during the field survey. Observed wildlife primarily included resident and migratory bird species such as western kingbird (*Tyrannus verticalis*), horned lark (*Eremophila alpestris*), and northern mockingbird (*Mimus polyglottos*), as well as western fence lizard (*Sceloporus occidentalis*). Wildlife species detected via scat included coyote (*Canis latrans*) and black-tailed hare (*Lepus californicus*). Many wildlife species common to the region are mobile, cryptic, and/or active during limited periods of day, and could therefore be easily missed during a single daytime survey.

5.2 Special-Status Plants

Results of USFWS, CNDDB, and CNPS searches revealed 16 special-status plant species that have potential to occur or that are known to occur in the Project Site region (see Attachment D, Special-Status Plants Potential to Occur). Of these, nine special-status plant species were removed from consideration due to lack of suitable habitat within or adjacent to the Project Site or because the site is outside of the species' known geographic or elevation range. The remaining seven special-status plant species have some potential to occur on the Project Site and are discussed in more detail below.

Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*) is a CRPR 4.2 species with a low potential to occur on site. Valley brodiaea is a perennial bulbiferous herb found in swales and vernal pools within Valley and foothill grassland between 30 and 1,095 feet amsl, often on old alluvial terraces and silty, sandy, and gravelly loam (CNPS 2020). It blooms April through May, and less often through June (CNPS 2020). Potentially suitable grassland and vernal swale/pool habitats are present on site; however, CNDDB occurrences are absent from the nine USGS 7.5-minute quadrangle search area. This species was documented in the "Clements" and "Valley Springs SW" quadrangles, but locational details are absent (CNPS 2020).



SOURCE: San Joaquin County 2017, ESRI/DigitalGlobe/Vivid Maxar 8/2019

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FIGURE 3

Soils

North Central Valley Energy Storage Project

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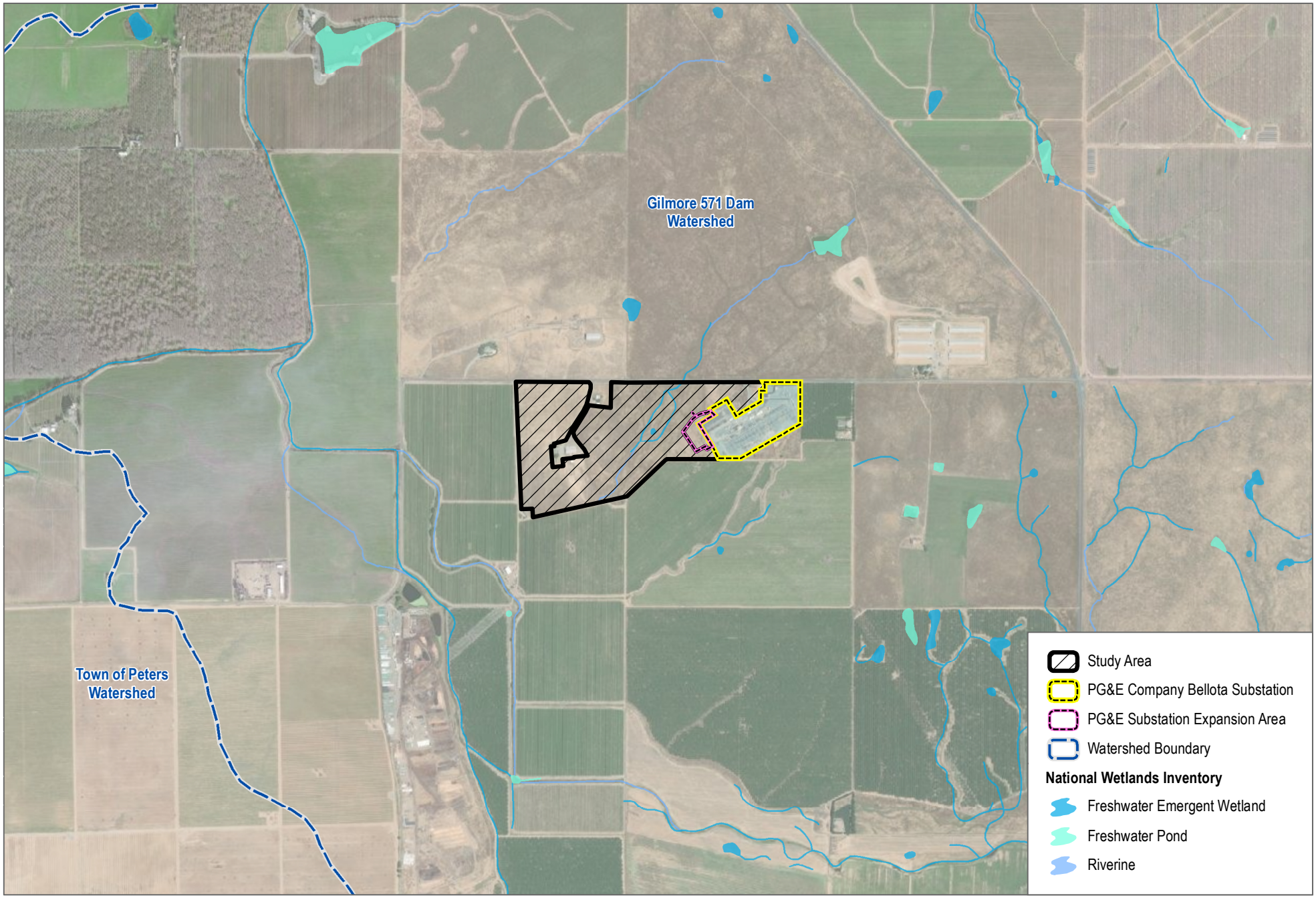

SOURCE: NHD 2018, ESRI/DigitalGlobe/Vivid Maxar 8/2019

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FIGURE 4

Hydrologic Setting

North Central Valley Energy Storage Project

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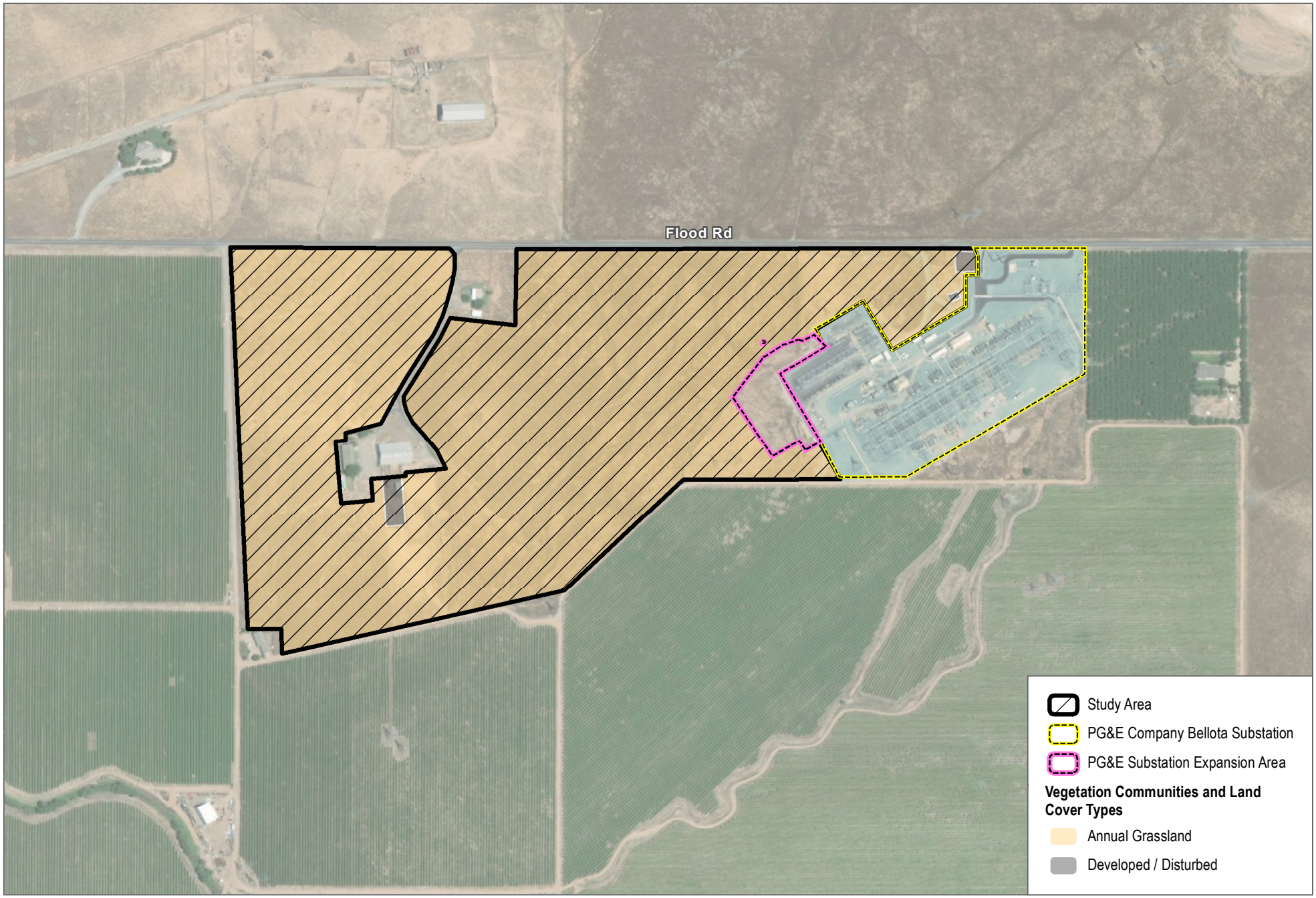

SOURCE: ESRI/DigitalGlobe/Vivid Maxar 8/2019

DUDEK

0 250 500 Feet

FIGURE 5

Vegetation Communities and Land Cover Types

North Central Valley Energy Storage Project

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Succulent owl's-clover (*Castilleja campestris* var. *succulenta*) is a federally threatened, state endangered, and CRPR 1B.2 species with a low potential to occur on site. Succulent owl's-clover is an annual, hemiparasitic herb found in often acidic vernal pools between 160 and 2,460 feet amsl (CNPS 2020). It blooms April through May, and less often March through May (CNPS 2020). Although vernal pool habitat and acidic soils are present on site, this species is only known from one CNDDB occurrence in the nine USGS 7.5-minute quadrangle search (CDFW 2020a). This 1995 occurrence was recorded approximately 19 miles north of the Project Site (CDFW 2020a).

Recurved larkspur (*Delphinium recurvatum*) is a CRPR 1B.2 species with a low potential to occur on site. Recurved larkspur is a perennial herb found in alkaline soils in chenopod scrub, cismontane woodland, Valley and foothill grassland between 5 and 2,590 feet amsl (CNPS 2020). It blooms March through June (CNPS 2020). Although grassland habitat is present on site, alkaline soils are absent. This species is only known from one historical CNDDB occurrence in the nine USGS 7.5-minute quadrangle search (CDFW 2020a). This 1937 occurrence recorded the species near Stockton (CDFW 2020a).

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is a CRPR 1B.2 species with a low potential to occur on site. Ahart's dwarf rush is an annual herb found in mesic Valley and foothill grassland between 95 and 750 feet amsl (CNPS 2020). It blooms March through May (CNPS 2020). Although grassland habitat is present on the site, this species is only known from one CNDDB occurrence in the nine USGS 7.5-minute quadrangle search (CDFW 2020a). This 1987 occurrence is located approximately 8 miles northeast of the Project Site growing in vernal pools within grassland with scattered oaks and associated species such as inch-high rush (Juncus uncialis) (CDFW 2020a).

Legenere (*Legenere limosa*) is a CRPR 1B.1 species with a moderate potential to occur on site. Legenere is an annual herb found in vernal pools below approximately 2,885 feet amsl. It blooms April through June (CNPS 2020). The Jepson Flora Project (2020) describes habitat as, "wet areas, vernal pools, and ponds." Suitable habitat is present within the various wetland features on site, although this species is not known from the vicinity ("Linden, CA" USGS 7.5-minute quadrangle). The nearest CNDDB occurrence recorded the species growing in deep vernal pools and swales approximately 10 miles north of the Project Site in 2008 (CDFW 2020a).

Pincushion navarretia (*Navarretia myersii* ssp. *myersii*) is a CRPR 1B.1 species with a low potential to occur on site. Pincushion navarretia is an annual herb found in often acidic vernal pools between 65 and 1,080 feet amsl (CNPS 2020). It blooms April through May (CNPS 2020). Although vernal pool habitat and acidic soils are present on site, this species is only known from one historical CNDDB occurrence in the nine USGS 7.5-minute quadrangle search (CDFW 2020a). This 1957 occurrence recorded the species approximately 7 miles northeast of the Project Site and north of the Calaveras River (CDFW 2020a).

Greene's tuctoria (*Tuctoria greenei*) is a federally endangered and CRPR 1B.1 species with a moderate potential to occur on site. Greene's tuctoria is an annual herb found in vernal pools between 95 and 3,510 feet amsl. It blooms May through July. Vernal pools may provide potential habitat for Greene's tuctoria. However, the only CNDDB occurrence in the region (nine USGS 7.5-minute quadrangle search area) recorded this species growing along a slough approximately 5 miles south of the Project Site in 1987 (CDFW 2020a). Moreover, this species was not observed during the field survey or the 2020 delineation, both conducted during the blooming period.

5.3 Special-Status Wildlife

Results of the USFWS and CNDDB queries revealed 18 special-status wildlife species as present or potentially present in the Project region (see Attachment E, Special-Status Wildlife Potential to Occur). Of these, nine species

were removed from consideration due to lack of suitable habitat on or adjacent to the Project Site, or due to the site being outside of the species' known geographic or elevation range. The remaining nine special-status wildlife species have some potential to occur on the Project Site and are discussed further below.

California tiger salamander (*Ambystoma californiense)* is a federally and state threatened species with a moderate potential to occur on site. California tiger salamanders breed in vernal pools, other ephemeral pools, and (uncommonly) along stream courses and human-made pools (if predatory fishes are absent), and aestivate within annual grassland, Valley–foothill hardwood, and Valley–foothill riparian habitat up to 1.2 miles away from breeding habitat (CDFW 2020a). Although the wetlands on site are unlikely to be inundated for a long enough period to support breeding populations, a review of aerial imagery shows a potentially suitable breeding pond located approximately 0.3 miles north of the Project Site. Therefore, the Project Site was evaluated for its suitability to provide upland aestivation habitat. However, the Project Site provides only marginal aestivation habitat due to a scarcity of small mammal burrows, confined to the northwestern portion of the Project Site. California ground squirrels (*Otospermophilus beecheyi*) or other small mammals could move onto the site at some point in the future, which would increase the value of the site for aestivation. This species is known from the "Linden, CA" USGS 7.5-minute quadrangle. The closest CNDDB occurrences recorded this species approximately 1.4 miles northwest of the Project Site in a large vernal pool complex within grazed grassland (CDFW 2020a). The area between that CNDDB occurrence and the Project Site is largely occupied by orchards and row crops, which may limit movement of California tiger salamanders. Another CNDDB occurrence is located approximately 1.7 miles south of the Project Site in grazed grassland.

Western spadefoot (*Spea hammondii*) is a CDFW SSC with a high potential to occur on site. Western spadefoot occurs in lowland streams, wetlands, riparian woodlands, and livestock ponds, often with dense, shrubby or emergent vegetation associated with deep, still, or slow-moving water, and uses adjacent uplands (CDFW 2020). Suitable wetland and adjacent grassland habitat is present on and adjacent to the Project Site, and this species is known from the "Linden, CA" USGS 7.5-minute quadrangle (CDFW 2020a). The closest CNDDB occurrence recorded the species near Calaveras River and Mormon Slough approximately 1.5 miles north of the Project Site (CDFW 2020a).

Tricolored blackbird (*Agelaius tricolor*) is a state threatened species and CDFW SSC with a high potential to forage but not nest on site. Tricolored blackbirds colonially nest near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry (*Rubus armeniacus*), foraging in grasslands, woodland, and agriculture (CDFW 2020a). Although this species would not be expected to nest within the wetlands on site due to a lack of emergent vegetation or Himalayan blackberry, tricolored blackbirds could forage across the Project Site. The closest CNDDB occurrence recorded this species nesting in Himalayan blackberry and thistle thicket approximately 2 miles northeast of the Project Site, although this habitat was eliminated in 1997 (CDFW 2020a).

Burrowing owl (*Athene cunicularia*) is a CDFW SSC with a moderate potential to occur on site. Burrowing owls nest and forage in grassland, open scrub, and agriculture, particularly with ground squirrel burrows (CDFW 2020a). This species is not known to occur within the "Linden, CA" USGS 7.5-minute quadrangle, but is present in the nine USGS 7.5-minute quadrangle search area (CDFW 2020a). Potentially suitable nesting and foraging habitat is present on site, although only a few California ground squirrel and Botta's pocket gopher (*Thomomys bottae*) burrows were observed within the northwestern portion of the Project Site. Burrowing owls could potentially move onto the Project Site at some point in the future, especially if small mammal prey abundance increases. The closest CNDDB occurrence recorded several colonies along the banks of Duck Creek located over 5 miles southeast of the Project Site (CDFW 2020a).

Swainson's hawk (*Buteo swainsoni*) is a state threatened species with a high potential to forage on site. Swainson's hawks nest in open woodland and savanna, riparian habitats, and in isolated large trees, and forage in nearby

grasslands and agricultural areas such as wheat/alfalfa fields and pasture (CDFW 2020a). Although nesting trees are absent from the Project Site, this species could nest in residential and riparian trees in the vicinity and forage across the Project Site. There are several nesting occurrences of this species along Mormon Slough, approximately 1.5 miles northwest of the Project Site (CDFW 2020a).

Bank swallow (*Riparia riparia*) is a state threatened species with a low potential to occur on site. Bank swallows nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils, occurring in open country and water during migration (CDFW 2020a). This species would not nest on site. Although potentially suitable foraging habitat is present on site, this species is only known from one CNDDB occurrence in the nine USGS 7.5-minute quadrangle search area (CDFW 2020a). This 2009 occurrence recorded the species nesting in the bank of the Mokelumne River (CDFW 2020a).

Pallid bat *(Antrozous pallidus)* is a CDFW SSC with a low potential to occur on site. Pallid bats occur in grasslands, shrublands, woodlands, and forests, and are most common in open, dry habitats with rocky outcrops for roosting, but also roosts in human-made structures and trees. This species could theoretically roost in adjacent trees and structures but would not roost on site. Potential roosting habitat in the Project vicinity is generally limited or of poor quality for pallid bat due to human disturbance in the area, as well as a lack of microhabitat features, such as rocky outcrops and riparian corridors. This species could potentially forage across the Project Site, although it is only known from one CNDDB occurrence in the nine USGS 7.5-minute quadrangle search area (CDFW 2020a). This 1951 occurrence recorded the species near Farmington (CDFW 2020a).

Vernal pool fairy shrimp (*Branchinecta lynchi*) is a federally threatened species with a high potential to occur on site. Vernal pool fairy shrimp occur in vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats. Suitable vernally mesic wetlands are present on site. The closest CNDDB occurrence recorded this species in a drainage, swales, and vernal pools within grazed non-native grassland located approximately 1.3 miles south of the Project Site (CDFW 2020a).

Vernal pool tadpole shrimp (*Lepidurus packardi*) is a federally endangered species with a high potential to occur on site. Vernal pool tadpole shrimp occur in ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales. Suitable vernally mesic wetlands are present on site. The closest CNDDB occurrence recorded this species in a vernal pool complex within grazed non-native grassland located approximately 1.3 miles south of the Project Site (CDFW 2020a).

Nesting migratory birds and raptors have the potential to occur within and/or adjacent to the Project Site. Raptors are protected by California Fish and Game Code Section 3503.5, and native migratory bird species are protected by the federal Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code. Trees, shrubs, and human-made structures in or adjacent to the Project Site provide potential nesting habitat for numerous native bird species. Several common bird species were detected during the July 2020 field survey, but no active nests were observed. A focused survey for nesting birds and raptors was not conducted during the field survey.

Roosting bats have the potential to occur adjacent to the Project Site, but would not roost on the Project Site itself. Native bats are protected by California Fish and Game Code Section 4150. Residential structures adjacent to the Project Site could support roosting bats and/or a maternity colony during the breeding season (March 15 through September 1), when flows in the on-site wetlands canal provide very limited freeboard and limit access in and out of the tunnel. Trees with exfoliating bark, crevices, and/or sufficient foliage adjacent to the Project Site provide potential roosting habitat for native bats. No roosting bats or their sign were identified during the field survey. However, neither a focused survey for roosting bats nor a survey of the adjacent residential areas was conducted.

5.4 Sensitive Natural Vegetation Communities

One sensitive natural vegetation community occurs within the Project Site: *Eryngium castrense* Association (42.007.06) (CDFW 2019). This rare association has a Global and State Rank of 2 and is considered rare and threatened throughout its range (CDFW 2020a). *E. castrense* occurs in both vernal pools and some seasonal wetland swales (SWS-01 and SWS-02) on site. However, these features by themselves do not make up 0.25 acres, the minimum mapping unit for special vegetation types, and will therefore not be considered as a distinct vegetation community in this report (CDFW 2020b).

5.5 Wetlands and Other Waters

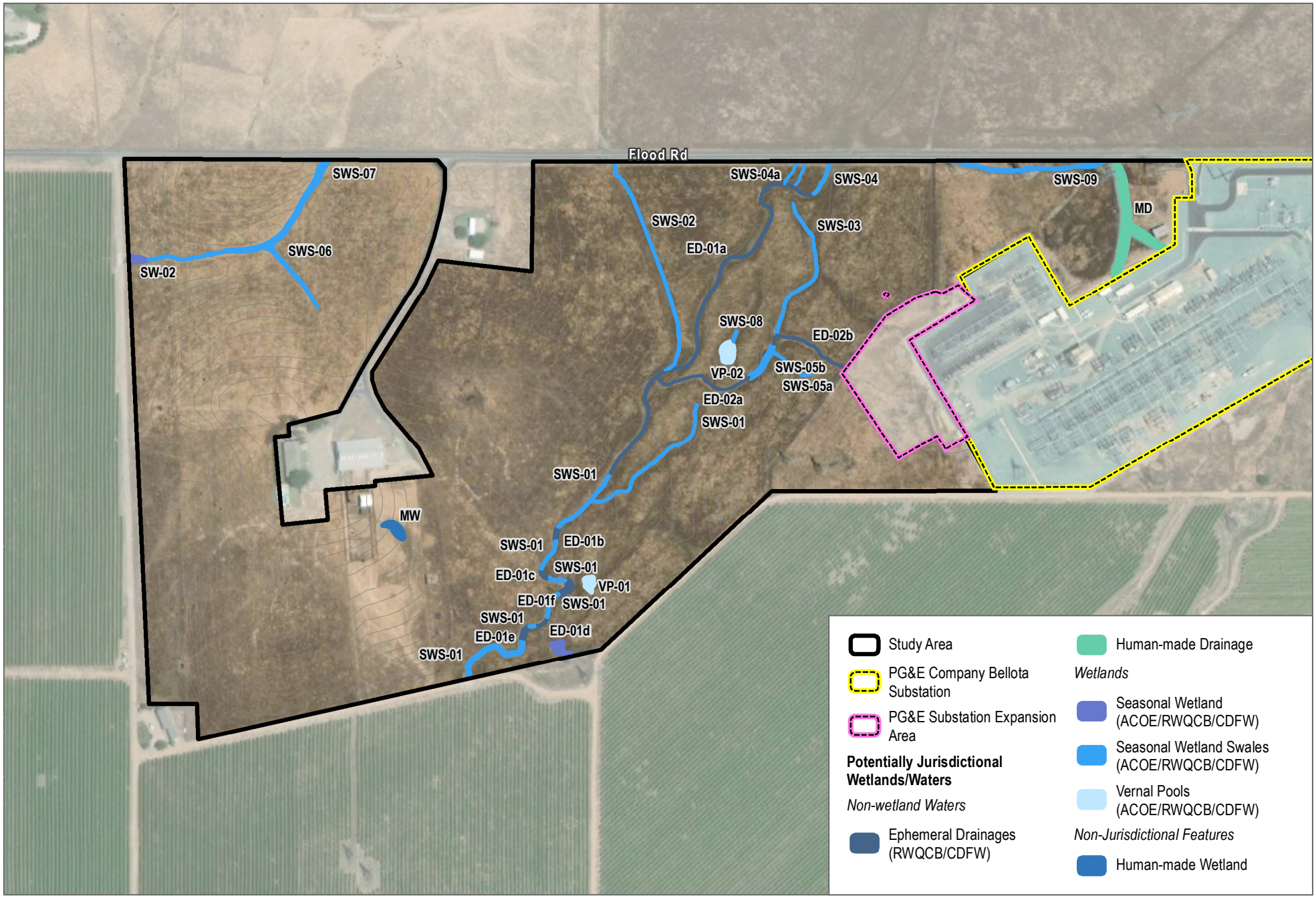
Dudek identified a total of 1.31 acres of aquatic resources within the Project Site: three types of potential wetlands and three types of non-wetland waters. The boundaries and extent of potentially jurisdictional wetlands and non-wetland waters are depicted on Figure 6, Aquatic Resources.

Vernal Pool

Two vernal pools make up 0.08 acres of the Project Site. Vernal pools form in seasonally flooded depressions in annual grasslands under a combination of specific climatic, soil, hydrologic, and topographic conditions. Typically, semi-impermeable soil underlies most vernal pools and restricts downward percolation of collected rain water. Most vernal pool species carry out their entire lifecycle in vernal pool wetlands, but the wetlands depend on the surrounding upland areas and together constitute the vernal pool grassland complex. The types of flowering wetland plants differentiate vernal pools from other seasonal wetlands, with a high proportion of plant species that are endemic (i.e., restricted) to vernal pools. These plants have adapted to survive partially submerged conditions and these conditions have kept the non-native grasses that compose grazing lands from invading, or at least dominating, the pools. The vernal pools are noticeably void of the grassland species dominating the Project Site and characterized by obligate wetland species, including Great Valley button celery (*Eryngium castrense*), hyssop loosestrife (*Lythrum hyssopifolia*), and Pacific foxtail (*Alopecurus saccatus*). No saturation or water was observed in the vernal pools during the July 2020 survey.

Seasonal Wetland

Two seasonal wetlands make up 0.06 acres of the Project Site. Seasonal wetlands occur in low-lying areas or depressions that accumulate runoff during precipitation events and remain saturated for a long enough period following rainfall to become dominated by species adapted to anaerobic conditions. Seasonal wetlands primarily differ from vernal pools in their underlying soils and vegetation communities. Seasonal wetland soils are typically more permeable than the soils associated with vernal pools. Nonetheless, seasonal wetlands can provide similar functions as vernal pools and support some of the same plant species. Seasonal wetlands within the Project Site are distinguished from vernal pools by sparse vegetation, disturbed conditions, and/or dominance of non-native species. Seasonal wetlands within the Project Site tend to support more non-native species than occur in vernal pools, and are characterized by more generalist wetland species than vernal pool endemic or indicator species. SW-01 is located in the south-central portion of the Project Site, and SW-02 is located in the northwest portion of the Project Site. SW-02 is located at the downstream end of the seasonal wetland swale SWS-07 and is characterized by a predominance of perennial rye grass, a facultative species. Italian rye grass (*Festuca perennis*) dominated the seasonal wetlands on site.



SOURCE: San Joaquin County 2017, ESRI/DigitalGlobe/Vivid Maxar 8/2019

DUDEK

0 175 350 Feet

FIGURE 6

Aquatic Resources

North Central Valley Energy Storage Project

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Seasonal Wetland Swale

Seasonal wetland swales are vegetated intermittent drainage wetlands that make up 0.67 acres of the Project Site. Depending on the underlying soils, swales share similar characteristics with either seasonal wetlands or vernal pools. Swales are linear in comparison to the vernal pools, and seasonal wetlands and often serve as drainage features into or out of, or connect two or more wetlands. Vegetation in the swales is similar as vegetation in seasonal wetlands and vernal pools and includes Italian ryegrass, seaside barley (*Hordeum marinum*), curly dock (*Rumex crispus*), toad rush (*Juncus bufonius*), and Great Valley button celery. Seasonal wetland swales in the eastern area of the Project Site (SWS-01 through SWS-05 and SWS-08) convey drainage from an adjacent field and sheet flow runoff from Flood Road. SWS-09 and SWS-10 convey runoff from the PG&E Bellota substation via concrete and riprap drainages. These swales connect to ephemeral drainages, which convey flow during storm events in a southwest direction, and surface water is directed into a culvert. The culvert outlets into a canal approximately 0.25 miles to the southwest. SWS-06 and SWS-07 receive runoff and sheet flow from the adjacent field and Flood Road as well; however, the swale empties into seasonal wetland SW-02 (described below) and is not directed into a culvert or other drainage feature.

Ephemeral Drainage

Ephemeral drainages occur throughout the annual grassland on the Project Site (0.22 acres). Ephemeral drainages convey water primarily after rain events and for short durations. These drainages vary from 1 to 20 feet wide. Most of these features are unvegetated or sparsely vegetated by the upland species that dominate the surrounding landscape and are associated with annual grassland communities. Due to the discontinuous presence of hydrology indicators, ephemeral drainages are mapped upstream and downstream of seasonal wetland swales. No water was observed flowing through the drainages during the field inspection. The drainages convey flow during storm events in a southwest direction where surface water is directed into a culvert and outlets into a canal approximately 0.25 miles to the southwest.

Manmade Drainage

One human-made drainage occurs within the northeastern portion of the Project Site (0.22 acres). This forked drainage was excavated in uplands and lined with riprap, likely to direct runoff from the PG&E Bellota substation northward. It supports sparse upland vegetation and likely only has ephemeral flow after rain or flood events. The drainage conveys into a seasonal wetland swale along Flood Road (SWS-09). These flows contribute to the Project Site's central drainage complex via sheet flow and/or an off-site ditch along Flood Road.

Human-made Wetland

One human-made wetland occurs within the southwestern portion of the Project Site just south of the southern residence (0.04 acres). A well and associated equipment (pump and piping) is present within the footprint of this human-made wetland to feed watering troughs for cattle. Unintended leakage of water has resulted in prolonged soil saturation. This artificial augmentation of the natural hydrology at this location has formed a wetland. The wetland is contained within a slight topographic depression in close proximity to the leaking irrigation equipment. Dominant vegetation observed within the potential wetland footprint was hydrophytic and included perennial rye grass and seaside barley. Several other herbaceous plant species typical to these conditions are also present throughout the wetland, including wild oat (*Avena fatua*), soft brome (*Bromus hordeaceus*), and burclover (*Medicago polymorpha*). This feature is clearly the result of artificial irrigation, is completely isolated from waters of

the United States, is created in upland, and would not be present if the leakage was fixed. Therefore, this feature is not considered a water of the United States and/or state.

5.6 Wildlife Movement Corridors and Habitat Linkages

Wildlife corridors are landscape features, usually linear in shape, that facilitate the movement of animals (or plants) over time between two or more patches of otherwise disjunct habitat. Corridors can be small and even human-made (e.g., highway underpasses, culverts, bridges), narrow linear habitat areas (e.g., riparian strips, hedgerows), or wider landscape-level extensions of habitat that ultimately connect larger core habitat areas. Depending on the size and extent, wildlife corridors can be used during animal migration, foraging events, and juvenile dispersal. They ultimately serve to facilitate genetic exchange between core populations, provide avenues for plant seed dispersal, enable increased biodiversity and maintenance of ecosystem integrity within habitat patches, and help offset the negative impacts of habitat fragmentation (Hilty et al. 2006). Natural areas throughout the Project Site may provide value as potential wildlife corridors or habitat linkages between the surrounding rural, natural areas.

The California Essential Habitat Connectivity Project, developed by CDFW and the California Department of Transportation, intends to describe and depict a functional network of connected wildlands that is essential to the continued support of California's diverse natural communities in the face of human development and climate change (Caltrans et al. 2010). The Essential Habitat Connectivity Project identifies large, relatively natural habitat blocks (Natural Landscape Blocks) in California that support native biodiversity and depict the relative permeability of areas to provide some level of ecological connectivity (Essential Connectivity Areas) between these habitat blocks. The Essential Connectivity Map indicates that the eastern half of the Project Site is located within an area that provides connectivity between similar habitat patches, while the western half falls within an area of "Limited Connectivity Opportunity" (CDFW 2020a). This mapping is relatively large-scaled and does not account for site-specific conditions.

6 Potential Impacts/ Mitigation Recommendations

6.1 Definition of Impacts

This section identifies the types of potential impacts that may occur as a result of implementation of the Project, including direct permanent impacts, direct temporary impacts, and indirect impacts.

Direct permanent impacts refer to the absolute and permanent physical loss of a biological resource due to clearing and grading associated with implementation of a project. Direct permanent impacts are analyzed in four ways: (1) permanent loss of vegetation communities and land covers that serve as habitat for special-status species occurring or potentially occurring on a site, (2) direct harm or mortality to individuals of special-status plant and wildlife species, (3) permanent loss of sensitive resources such as jurisdictional wetlands/waters, or (4) permanent loss of wildlife movement and habitat connectivity in an area.

Direct temporary impacts refer to a temporal loss of vegetation communities and land covers resulting from vegetation and land cover clearing and grading associated with implementation of a project. The main criterion for direct temporary impacts is that impacts would occur for a short period but would be reversible over time.

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct disturbance zone that may occur during grading or maintenance activities (i.e., short-term construction-related indirect impacts) or later in time as a result of the project (i.e., long-term, or operational, indirect impacts). Short-term indirect impacts can include dust, human activity, pollutants (including potential erosion), and noise that extend beyond the identified construction area. Long-term indirect impacts can include changes to hydrology, introduction of invasive species, dust, and noise that are operations-related and occur over the long term. Potential impacts from Project implementation on various special-status biological resources occurring or potentially occurring on the Project Site are discussed below

6.2 Overview of Project Mitigation Strategy

Dudek understands that North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife and plant species to the maximum extent feasible through careful project design and extensive avoidance buffers surrounding site wetland features. For those impacts to special-status wildlife and plant species that cannot be avoided, North Central Valley Energy Storage, LLC will mitigate for impacts to special-status wildlife through the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (“SJMSCP”). When approved by the San Joaquin Council of Governments (SJCOG) as a covered activity, North Central Valley Energy Storage, LLC shall include Incidental Take Minimization Measures as conditions of Project approval, in accordance with SJMSCP Sections 5.2.3 and 5.2.4, as provided by SJCOG. The applicant will also pay mitigation fees to SJCOG as compensatory mitigation for impacts to biological resources under FESA, CESA, and CEQA.

The specific Incidental Take Minimization Measures that would be applied to the project would be determined by SJCOG based on the recommendations of their biologist. However, a summary of Incidental Take Minimization Measures that would likely apply to the project is provided in Table 3, which are further detailed below.

Table 3. Applicability of SJMSCP to Project Impacts

Species	Potential to Occur on Project Site	Covered under SJMSCP?	Applicable SJMSCP ITMM or Mitigation
Plants			
Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*)	Low	No	Refer to Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates, and Typical ITMMs for Rare Plant Species. Also mitigated through payment of compensatory mitigation fees for other species using vernal pool grassland habitat.
Succulent owl's-clover (*Castilleja campestris* var. *succulenta*)	Low	Yes	Refer to Typical ITMMs for Rare Plant Species. Full avoidance required under SJMSCP.
Recurved larkspur (*Delphinium recurvatum*)	Low	Yes	Refer to Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates, and Typical ITMMs for Rare Plant Species. Also mitigated through payment of compensatory mitigation fees for other species using vernal pool grassland habitat.
Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*)	Low	No	Refer to Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates, and Typical ITMMs for Rare Plant Species. Also mitigated through payment of compensatory mitigation fees for other species using vernal pool grassland habitat.
Legenere (*Legenere limosa*)	Moderate	Yes	Refer to Typical ITMMs for Rare Plant Species. Full avoidance required under SJMSCP.
Pincushion navarretia (*Navarretia myersii* ssp. *myersii*)	Low	No	Refer to Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates, and Typical ITMMs for Rare Plant Species. Also mitigated through payment of compensatory mitigation fees for other species using vernal pool grassland habitat.
Greene's tuctoria (*Tuctoria greenei*)	Moderate	Yes	Refer to Typical ITMMs for Rare Plant Species. Full avoidance required under SJMSCP.
Wildlife			
California tiger salamander (*Ambystoma californiense*)	Moderate	Yes	Refer to Typical ITMMs for California Tiger Salamander. Also mitigated through payment of compensatory mitigation fees.
Western spadefoot (*Spea hammondii*)	High	Yes	Refer to Typical ITMMs for Western Spadefoot. Also mitigated through payment of compensatory mitigation fees.
Tricolored blackbird (*Agelaius tricolor*)	High potential to forage, low potential to nest	Yes	ITMMs relate to colonial nesting sites only. Mitigated through payment of compensatory mitigation fees.

Burrowing owl (*Athene cunicularia*)	Moderate	Yes	Refer to Typical ITMMs for Burrowing Owl and MBTA compliance below. Also mitigated through payment of compensatory mitigation fees.
Swainson's hawk (*Buteo swainsoni*)	High potential to forage, no potential to nest	Yes	Refer to Typical ITMMs for Swainson's Hawk and MBTA compliance below. Also mitigated through payment of compensatory mitigation fees.
Bank swallow (*Riparia riparia*)	Low	Yes	Nest buffers required under SJMSCP and MBTA. Also mitigated through payment of compensatory mitigation fees.
Pallid bat (*Antrozous pallidus*)	Low	No	Mitigated through payment of compensatory mitigation fees for other SJMSCP covered species that use annual grassland.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	High	Yes	Refer to Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates. Also mitigated through payment of compensatory mitigation fees.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	High	Yes	Refer to Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates. Also mitigated through payment of compensatory mitigation fees.
Nesting migratory birds and raptors	High	No	Various ITMMs protect nesting migratory birds and raptors. Refer also to MBTA compliance below.
Roosting bats	Potential in vicinity	Yes	Mitigated through payment of compensatory mitigation fees for other SJMSCP covered species that use annual grassland.
Other			
Wetlands and Other Waters	0.035 acre present	No	Mitigated through permitting by aquatic resource agencies (USACE, SWRCB, CDFW). Also mitigated through payment of compensatory mitigation fees.

Typical ITMMs for Burrowing Owl

The presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls may therefore be discouraged from entering or occupying construction areas by discouraging the presence of ground squirrels. To accomplish this, the Project Proponent should prevent ground squirrels from occupying the project site early in the planning process by employing one of the following practices:

A. The Project Proponent may plant new vegetation or retain existing vegetation entirely covering the site at a height of approximately 36" above the ground. Vegetation should be retained until construction begins. Vegetation will discourage both ground squirrel and owl use of the site.

B. Alternatively, if burrowing owls are not known or suspected on a project site and the area is an unlikely occupation site for red-legged frogs, San Joaquin kit fox, or tiger salamanders:

The Project Proponent may disc or plow the entire project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed through one of the following approved methods to prevent reoccupation of the project site. Detailed descriptions of these methods are included in Appendix A, Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County, dated March, 2000:

1. Anticoagulants. Establish bait stations using the approved rodenticide anticoagulants Chlorophacinone or Diphacinone. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

2. Zinc Phosphide. Establish bait stations with non-treated grain 5-7 calendar days in advance of rodenticide application, and then apply Zinc Phosphide to bait stations. Rodenticides shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

3. Fumigants. Use below-ground gas cartridges or pellets and seal burrows. Approved fumigants include Aluminum Phosphide (Fumitoxin, Phostoxin) and gas cartridges sold by the local Agricultural Commissioner's office. NOTE: Crumpled newspaper covered with soil is often an effective seal for burrows when fumigants are used. Fumigants shall be used in compliance with U.S. Environmental Protection Agency label standards and as directed by the San Joaquin County Agricultural Commissioner.

4. Traps. For areas with minimal rodent populations, traps may be effective for eliminating rodents. If trapping activities are required, the use of traps shall be consistent with all applicable laws and regulations.

If the measures described above were not attempted or were attempted but failed, and burrowing owls are known to occupy the project site, then the following measures shall be implemented:

A. Breeding season (February 1 through August 31): Pre-construction surveys for burrowing owls [following the Staff Report on Burrowing Owls (CDFG 2012)] will be performed no less than 14 days prior and again 24-hours prior to initial ground disturbance activities.

1. Any occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies (representatives on the TAC); or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Once the fledglings are capable of independent survival, a Burrowing Owl Exclusion Plan (BOEP) is developed and approved by the applicable Department of Fish and Wildlife SJMSCP representative/office, and habitat is mitigated in accordance with the Staff Report (CDFG 2012), then the burrow can be destroyed. Pre-construction surveys following destruction of burrows and prior to initial construction activities are required (24-hours prior) to ensure owls do not re-colonize the Project Area.

2. If Project activities are delayed or suspended for more than 15 days during the breeding season, surveys will be repeated.

B. Non-breeding season (September 1 through January 31): Pre-construction surveys following the Staff Report on Burrowing Owls (CDFG 2012) will be performed prior (no less than 14-days and again 24-hours prior) to initial ground disturbance activities. Burrowing owls may be evicted after a Burrowing Owl Exclusion Plan is developed and approved by the applicable Department of Fish and Wildlife SJMSCP representative/office and habitat is mitigated in accordance with the Staff Report (CDFG 2012).

Pre-construction surveys following destruction of burrows and prior to initial construction activities are required (24-hours prior) to ensure owls do not re-colonize the Project Area. If owls are found within 50 meters of the Project Area, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

MBTA Compliance

The SJMSCP relies on implementation of the Nationwide Standard Conservation Measures promulgated by USFWS[1]. Refer to the USFWS for the most up-to-date measures, which include worker education, delineation of project boundaries, soil erosion prevention, stressor avoidance during vegetation removal, avoidance of invasive species introduction, limitations on artificial lighting, and other measures.

Typical ITMMs for California Tiger Salamander

Because the project is seeking a Clean Water Act Section 404 permit through the USACE, ITMMs will be prescribed through technical assistance provided to the U.S. Army Corps of Engineers by the U.S. Fish and Wildlife, concurrent with formal consultations conducted for listed vernal pool species, or potentially through SJCOG with the concurrence of the permitting agencies. Specific measures for impact minimization will be based on the framework provided in the SJMSCP. However, that framework generally focuses on preservation of aquatic habitats, which are not present on the project site. Likely ITMMs that would be applied for California tiger salamander would therefore include retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in uplands; and maintenance of open habitat between off-site breeding ponds and estivation sites.

Typical ITMMs for Western Spadefoot

If a proposed project intends to eliminate aquatic habitat including wetlands, ponds, springs and other standing water sources, and will not create a new, on-site habitat, then dewatering should occur prior to site disturbance. Dewatering and impacts to aquatic habitats should occur outside of the breeding season (approximately December to February). Other ITMMs for western spadefoot would overlap with those for California tiger salamander, including retention of small mammal burrows and other suitable estivation habitat (e.g., underground holes, cracks, or niches) in uplands; and maintenance of open habitat between off-site breeding ponds and estivation sites.

Typical ITMMs for Rare Plant Species

[1] https://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Unless the SJMSCP Technical Advisory Committee finds that all suitable habitat would be avoided by a project, preconstruction surveys shall be conducted during the appropriate season to determine presence or absence of all covered plant species with potential to occur on the project site, as .directed in SJMSCP Section 5.2.2.

Typical ITMMs for Vernal Pool Plants and Vernal Pool Invertebrates

Full avoidance of succulent owl's clover, legenere, Greene's tuctoria, longhorn fairy shrimp and Conservancy fairy shrimp is required by the SJMSCP in accordance with the full avoidance measures in Section 5.5.9. For all other vernal pool plants and vernal pool invertebrates:

A. Filling vernal pools shall be delayed until pools are dry and samples from the top layer of vernal pools soils are collected. Soil collections shall be sufficient to include a representative sample of plant and animal life present in the pools by incorporating seeds, cysts, eggs, spores and similar inoculum.

B. Collected soils shall be dried and stored in pillowcases labeled with the date and location of soils collected. Soils will be deposited with the JPA. The JPA shall retain the soils in a cool, dry area and shall be responsible for providing soils to vernal pool construction managers for inoculating newly created vernal pools on Preserve lands.

Typical ITMMs for Swainson's Hawk

The only typical ITMM for Swainson's hawk relates to protection of nest trees, which are not present on the project site.

Typical ITMMs for Roosting Bats

Bat roosting on the project site is not likely. However, the following ITMMs are typically required to protect roosting bats under the SJMSCP.

A. Prior to the nursery season, nursery sites shall be sealed.

B. Seal hibernation sites, prior to the hibernation season (November through March) when hibernation sites are identified on the project site. Alternatively, grating may be installed as described in 5.5.9(E)(1) of the SJMSCP.

C. When colonial roosting sites which are located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site unless otherwise approved pursuant to Section 5.2.3.2 of the SJMSCP.

6.3 Impacts to Special-Status Plants

Of the seven special-status plant species with a potential to occur, six species have a low potential to occur (valley brodiaea, succulent owl's-clover, recurved larkspur, Ahart's dwarf rush, pincushion navarretia, and Greene's tuctoria), and one species, legenere, has a moderate potential to occur. Two plant species with federal and state listing status pursuant to FESA or CESA have a potential to occur on the Project Site (succulent owl's-clover and

Greene's tuctoria). The SJMSCP does not include as covered species three of the seven special-status plant species (valley brodiaea, Ahart's dwarf rush, pincushion navarettia); however, these species were not observed on the project site during seasonal botanical surveys, these species have a low potential to occur, and potential impacts would be further minimized through careful project design, extensive avoidance buffers surrounding site wetland features, incidental take minimization measures required under the SJMSCP such as preconstruction surveys for similar species, and SJMSCP compensatory mitigation. Although they are covered species under the SJMSCP, the SJMSCP does not allow removal of valley brodiaea, Ahart's dwarf rush, pincushion navarettia, so if these species were found on the Project Site during surveys required by the SJMSCP, avoidance would be required.

6.4 Impacts to Special-Status Wildlife

California Tiger Salamander. The Project Site contains marginally suitable to unsuitable breeding habitat for the California tiger salamander, although there is a potentially suitable breeding pool located 0.3 miles northeast of the Project Site. Dudek assumes that the aquatic sampling of the on-site wetlands for California tiger salamander larvae is not necessary. Regardless, the Project would avoid wetlands on-site and no direct or indirect effects to breeding habitat would occur. However, Project implementation could result in temporary disturbance and direct removal of upland refugia habitat for California tiger salamander. Project construction could also potentially cause injury or mortality of individual California tiger salamanders that could occupy upland refugia onsite.

North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife species to the maximum extent feasible through careful project design and extensive avoidance buffers surrounding site wetland features. Incidental take minimization measures required under the SJMSCP would further reduce potential for impacts to California tiger salamander. If habitat loss cannot be avoided, compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for California tiger salamander.

Western Spadefoot. The Project Site contains suitable aquatic breeding habitat and upland refugia habitat for western spadefoot. Project implementation could result in temporary disturbance and direct removal habitat for western spadefoot. Project construction could also potentially cause injury or mortality of individual western spadefoot.

North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife species to the maximum extent feasible through careful project design and extensive avoidance buffers surrounding site wetland features. Incidental take minimization measures required under the SJMSCP would further reduce potential for impacts to western spadefoot. If habitat loss cannot be avoided, compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for western spadefoot.

Burrowing Owl. Suitable nesting and foraging habitat in the form of suitable sized burrows were observed within the northeastern portion of the Project Site. The Project Site offers suitable foraging conditions year-round. While no evidence of burrowing owls was observed during the field survey, it is possible that burrowing owls may use the Project Site for foraging and denning at some point in the future. The region is known to support populations of burrowing owls. Project construction could disturb active nests on or nest the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs, or displacement of wintering owls resulting in their mortality or loss of reproductive potential.

North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife species to the maximum extent feasible through careful project design. Incidental take minimization measures required under the SJMSCP

would further reduce potential for impacts to burrowing owl. Compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for burrowing owl.

Swainson's Hawk. As discussed in Section 5.3, the Project Site contains suitable foraging habitat for the Swainson's hawk. Although suitable nesting habitat is absent from the Project Site itself, Swainson's hawks are known to nest in the vicinity and could potentially nest in nearby riparian trees and residential trees. While unlikely, it is theoretically possible that Swainson's hawks could nest in residential trees immediately adjacent to the Project Site. If Swainson's hawks are nesting adjacent to the Project Site at the time of construction, individual hawks could be disturbed such that they would abandon their nest(s). Project activities that adversely affect the nesting success or result in mortality of Swanson's hawks would violate state and federal laws. Loss of foraging habitat can displace nesting pairs of Swainson's hawks or reduce reproductive success.

North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife species to the maximum extent feasible through careful project design. Incidental take minimization measures required under the SJMSCP would further reduce potential for impacts to Swainson's hawk. Compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for Swainson's hawk.

Vernal Pool Branchiopods. Vernal pools on the Project Site provide suitable habitat for two special-status invertebrates: vernal pool fairy shrimp and vernal pool tadpole shrimp. Removal of suitable habitat would result in injury or mortality of these species if they are present.

North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife species to the maximum extent feasible through careful project design and extensive avoidance buffers surrounding site wetland features. Incidental take minimization measures required under the SJMSCP would further reduce potential for impacts to vernal pool branchiopods. Compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for vernal pool branchiopods.

Nesting Raptors and Migratory Birds. The Project Site contains suitable nesting habitat for a number of avian species protected under state and federal law. Even the most degraded habitats of the Project Site could be used by the killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura*), and other disturbance-tolerant birds. If birds were to be nesting within or adjacent to the Project Site at the time of construction, Project-related activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success of raptors or result in mortality of individual birds constitute a violation of state laws.

North Central Valley Energy Storage, LLC intends to avoid impacts to nesting raptors and migratory birds to the maximum extent feasible through careful project design. Incidental take minimization measures required under the SJMSCP would further reduce potential for impacts to nesting raptors and migratory birds. Compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for nesting raptors and migratory birds.

Native Bats (including Pallid Bat). Construction of the Project may result in temporary and permanent impacts to native bats. If native bats are roosting on the Project Site or vicinity, direct impacts may result from the permanent removal of roosting sites, such as trees and snags. Temporary impacts to native bats may result from Project-related noise disturbance to an occupied roosting site in the vicinity of construction.

North Central Valley Energy Storage, LLC intends to avoid impacts to special-status wildlife species to the maximum extent feasible through careful project design. Incidental take minimization measures required under the SJMSCP would further reduce potential for impacts to native bat species. Compensatory mitigation under the SJMSCP would mitigate permanent and temporary loss of habitat value for native bat species, including pallid bat.

Special-Status Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere. Five special-status bird species have the potential to forage across the Project Site from time to time but would not breed on site: tricolored blackbird, bank swallow, northern harrier, white-tailed kite, and loggerhead shrike. The species have not been recorded on the Project Site and northern harrier, white-tailed kite, and loggerhead shrike are not recorded within 5 miles of the Project site. However, Project implementation would result in the loss of potential foraging habitat. Potential foraging habitat on the Project Site is not uniquely important for these species, and similar or higher quality foraging habitat is relatively abundant in the region. Moreover, these species are highly mobile while foraging, and would be expected to fly away if disturbed.

6.5 Impacts to Sensitive Vegetation Communities

North Central Valley Energy Storage, LLC intends to avoid impacts to sensitive vegetation communities to the maximum extent feasible through careful project design and extensive avoidance buffers surrounding site wetland features. Further, none of the *E. castrense* populations within the two vernal pools and two seasonal wetland swales on site met the .25-acre minimum mapping unit for special vegetation communities (CDFW 2020b). It is possible that CDFW would still consider effects on the *E. castrense* populations make an exception to the minimum mapping unit because these species occur in wetlands that often are smaller than that threshold. If an impact to the *E. castrense* Association is identified after final project design, mitigation could be provided by those measures required for impacts to wetland and other waters (Section 6.6). Additionally, coverage under the SJMSCP may satisfy mitigation requirements for this impact as well. Given these other mitigation sources and expectation of complete impact avoidance, additional mitigation is not recommended.

6.6 Impacts to Wetlands and Other Waters

As discussed in Section 5.5, Wetlands and Other Waters, 1.29 acres of wetlands or other waters potentially under the jurisdictional of ACOE, CDFW, and/or the RWQCB were identified on the Project Site. Project implementation resulting in the removal or fill of all or part of these wetland and other waters would be considered a significant impact. North Central Valley Energy Storage, LLC intends to avoid impacts to wetlands and other waters to the maximum extent feasible through careful project design and extensive avoidance buffers surrounding site wetland features. If complete avoidance of any of these drainages or wetlands in infeasible, regulatory permits in the form of a Water Quality Certification from the RWQCB, a Nationwide Permit authorization from the ACOE, and a Streambed Alteration Agreement from the CDFW would be required. Compliance with the requirements of these federal and state authorizations, if needed, would ensure that any impacts to wetland and other waters would be avoided, minimized, or mitigated.

6.7 Impacts to Wildlife Movement Corridors and Habitat Linkages

As discussed in Section 5.6, the Essential Connectivity Map indicates that the eastern half of the Project Site is located within an area that may provide connectivity between similar habitat patches. Project implementation would result in the loss of habitat linkage, if it is in active use. However, the western portion of the Project Site is not mapped as being part of a habitat linkage, and it is likely that site-specific conditions such as adjacent land uses, fencing, and the existing PG&E Bellota substation limit the value of the Project Site as a habitat linkage. Therefore, mitigation for impacts to wildlife movement corridors and habitat linkages is not warranted.

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Appendix A

Database Queries

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

San Joaquin County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

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

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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

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

Reptiles

NAME	STATUS

Giant Garter Snake Thamnophis gigas — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4482

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	
California Tiger Salamander Ambystoma californiense	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio	Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8246	
Vernal Pool Fairy Shrimp Branchinecta lynchi	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	

Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Fleshy Owl's-clover Castilleja campestris ssp. succulenta There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8095	Threatened

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ

below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

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

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

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

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

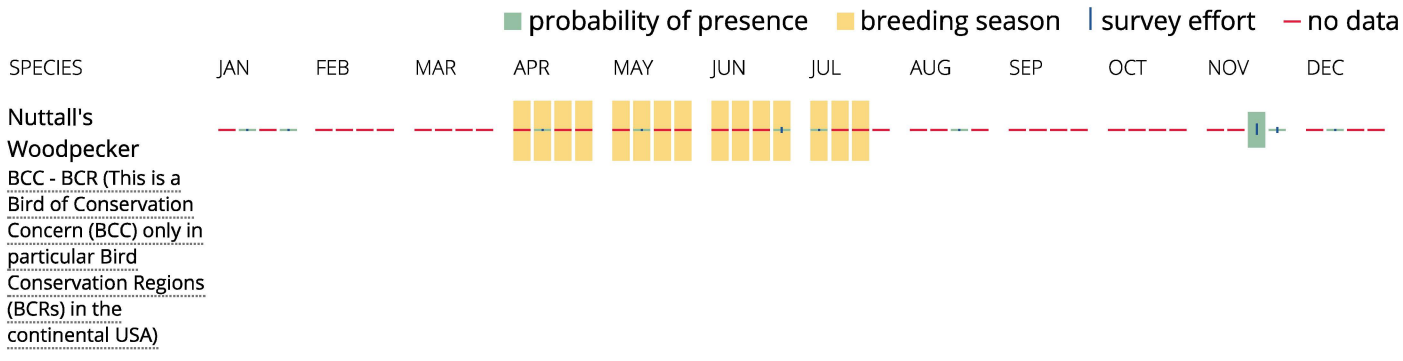
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

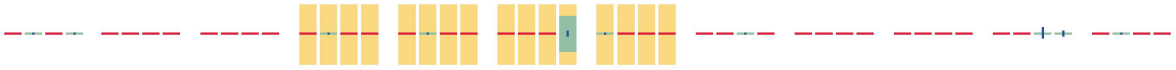
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

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



Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

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

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1A

RIVERINE

R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Linden (3812111) OR Waterloo (3812112) OR Valley Springs SW (3812018) OR Lockeford (3812122) OR Clements (3812121) OR Wallace (3812028) OR Stockton East (3712182) OR Peters (3712181) OR Farmington (3712088))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Agrostis hendersonii Henderson's bent grass	PMPOA040K0	None	None	G2Q	S2	3.2
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Andrena subapasta An andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arctostaphylos myrtifolia Ione manzanita	PDERI04240	Threatened	None	G1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calycadenia hooveri Hoover's calycadenia	PDAST1P040	None	None	G2	S2	1B.3
Castilleja campestris var. succulenta succulent owl's-clover	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eryngium pinnatisectum Tuolumne button-celery	PDAPI0Z0P0	None	None	G2	S2	1B.2
Eryngium racemosum Delta button-celery	PDAPI0Z0S0	None	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Ione Chaparral Ione Chaparral	CTT37D00CA	None	None	G1	S1.1	
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Mylopharodon conocephalus hardhead	AFCJB25010	None	None	G3	S3	SSC
Navarretia myersii ssp. myersii pincushion navarretia	PDPLM0C0X1	None	None	G2T2	S2	1B.1
Navarretia paradoxiclara Patterson's navarretia	PDPLM0C150	None	None	G2	S2	1B.3
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Tuctoria greenei Greene's tuctoria	PMPOA6N010	Endangered	Rare	G1	S1	1B.1

Record Count: 38

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

16 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812122, 3812121, 3812028, 3812112, 3812111, 3812018, 3712182 3712181 and 3712088;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Agrostis hendersonii	Henderson's bent grass	Poaceae	annual herb	Apr-Jun	3.2	S2	G2Q
Arctostaphylos myrtifolia	Ione manzanita	Ericaceae	perennial evergreen shrub	Nov-Mar	1B.2	S1	G1
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Calycadenia hooveri	Hoover's calycadenia	Asteraceae	annual herb	Jul-Sep	1B.3	S2	G2
Castilleja campestris var. succulenta	succulent owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	(Mar)Apr-May	1B.2	S2S3	G4? T2T3
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.2	S2	G2
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	1B.1	S2	G2T2
Navarretia paradoxiclara	Patterson's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	1B.3	S2	G2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	1B.1	S1	G1

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 08 July 2020].

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rareplants@cnps.org

Appendix B

Photo Log

Annual Grassland

Cattle Trough

Cattle Infrastructure (“Developed/Disturbed”)

Ephemeral Drainage

	
Seasonal Wetland	Man-made Drainage
	
Seasonal Wetland Swale	Vernal Pool

Appendix C

List of Species Observed on Site

Plants

AMARANTHACEAE – AMARANTH FAMILY

* *Amaranthus albus* – prostrate pigweed

APIACEAE – CARROT FAMILY

* *Conium maculatum* – poison hemlock

Eryngium castrense – Great Valley eryngo

APOCYNACEAE – DOGBANE FAMILY

Asclepias eriocarpa – woollypod milkweed

ASTERACEAE – SUNFLOWER FAMILY

* *Carduus pycnocephalus* – Italian plumeless thistle

Centromadia fitchii – Fitch's tarweed

* *Erigeron bonariensis* – asthmaweed

Holocarpha virgata – yellowflower tarweed

* *Hypochaeris glabra* – smooth cat's ear

* *Lactuca serriola* – prickly lettuce

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii – Menzies' fiddleneck

CARYOPHYLLACEAE – PINK FAMILY

* *Silene gallica* – common catchfly

* *Spergularia rubra* – red sandspurry

CONVOLVULACEAE – MORNING-GLORY FAMILY

* *Convolvulus arvensis* – field bindweed

EUPHORBIACEAE – SPURGE FAMILY

Croton setiger – dove weed

FABACEAE – LEGUME FAMILY

Trifolium willdenovii – tomcat clover

JUNCACEAE – RUSH FAMILY

Juncus bufonius – toad rush

LAMIACEAE – MINT FAMILY

Trichostema lanceolatum – vinegarweed

MALVACEAE – MALLOW FAMILY

* *Malva parviflora* – cheeseweed mallow

ONAGRACEAE – EVENING PRIMROSE FAMILY

Epilobium brachycarpum – tall annual willowherb

POACEAE – GRASS FAMILY

* *Avena fatua* – wild oat
* *Bromus hordeaceus* – soft brome
* *Cynodon dactylon* – Bermudagrass
* *Elymus caput-medusae* – medusahead
* *Festuca perennis* – perennial rye grass
* *Hordeum marinum* – seaside barley

Leptochloa fusca ssp. *uninervia* – Mexican sprangletop

POLYGONACEAE – BUCKWHEAT FAMILY

* *Polygonum aviculare* – prostrate knotweed
* *Rumex crispus* – curly dock

THEMIDACEAE – BRODIAEA FAMILY

Brodiaea elegans – harvest brodiaea

* non-native naturalized species

Appendix D

Special-Status Plant Species' Potential to Occur within the Project Site

Special-Status Plant Species' Potential to Occur within the Project Site

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Agrostis hendersonii	Henderson's bent grass	None/None/3.2	Valley and foothill grassland (mesic), Vernal pools/annual herb/Apr–June/225–1,000	**Not expected to occur.** The Project site is below the elevational range of this species.
Arctostaphylos myrtifolia	Ione manzanita	FT/None/1B.2	Chaparral, Cismontane woodland; acidic, Ione soil, clay or sandy/perennial evergreen shrub/Nov–Mar/195–1,900	**Not expected to occur.** No suitable chaparral or cismontane woodland habitat is present within the Project site.
Brodiaea rosea ssp. *vallicola*	valley brodiaea	None/None/4.2	Valley and foothill grassland (swales), Vernal pools; Old alluvial terraces; silty, sandy, and gravelly loam/perennial bulbiferous herb/Apr–May(June)/30–1,095	**Low potential to occur.** This species is not known to occur within the vicinity[2] (CDFW 2020) but is present in the region[1] (CNPS 2020). Potentially suitable grassland and vernal swale/pool habitats are present on site, however, CNDDB occurrences are absent from the vicinity. This species was documented in the "Clements" and "Valley Springs SW" USGS 7.5-minute quadrangles but locational details are absent (CNPS 2020).
Calycadenia hooveri	Hoover's calycadenia	None/None/ 1B.3	Cismontane woodland, Valley and foothill grassland; rocky/annual herb/July–Sep/210–985	**Not expected to occur.** The Project site is below the elevational range of this species.
Castilleja campestris var. *succulenta*	succulent owl's-clover	FT/SE/1B.2	Vernal pools (often acidic)/annual herb (hemiparasitic)/(Mar)Apr–May/160–2,460	**Low potential to occur.** Although vernal pool habitat and acidic soils are present on site, this species is only known from one CNDDB occurrence in the region[1] (CDFW 2020). This 1995 occurrence recorded the species approximately 19 miles north of the project site (CDFW 2020).
Delphinium recurvatum	recurved larkspur	None/None/ 1B.2	Chenopod scrub, Cismontane woodland, Valley and foothill grassland; alkaline/perennial herb/Mar–June/5–2,590	**Low potential to occur.** Although grassland habitat is present on site, alkaline soils are absent. This species is only known from one historical CNDDB occurrence in the region[1] (CDFW 2020). This 1937 occurrence recorded the species near Stockton (CDFW 2020).
Eryngium pinnatisectum	Tuolumne button-celery	None/None/ 1B.2	Cismontane woodland, Lower montane coniferous forest, Vernal pools; mesic/annual / perennial herb/May–Aug/225–3,000	**Not expected to occur.** The Project site is below the elevational range of this species.

Special-Status Plant Species' Potential to Occur within the Project Site

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Eryngium racemosum	Delta button-celery	None/SE/1B.1	Riparian scrub (vernally mesic clay depressions)/annual / perennial herb/June–Oct/5–100	**Not expected to occur.** No riparian scrub habitat is present within the Project site.
Horkelia parryi	Parry's horkelia	None/None/ 1B.2	Chaparral, Cismontane woodland; Ione formation and other soils/perennial herb/Apr–Sep/260–3,510	**Not expected to occur.** No chaparral or cismontane woodland habitats are present within the Project site.
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush	None/None/ 1B.2	Valley and foothill grassland (mesic)/annual herb/Mar–May/95–750	**Low potential to occur.** Although grassland habitat is present on the site, this species is only known from one CNDDB occurrence in the region[1] (CDFW 2020).This 1987 occurrence is located approximately 8 miles northeast of the Project site growing in vernal pools within grassland with scattered oaks and associate species inch-high rush (*Juncus uncialis*) (CDFW 2020).
Legenere limosa	legenere	None/None/ 1B.1	Vernal pools/annual herb/Apr–June/0–2,885	**Moderate potential to occur.** This species is not known to occur within the vicinity[2] but is present within the region[1] (CDFW 2020). Suitable vernal pool habitat is present on site. The closest presumed extant occurrence is located approximately 10 miles north of the project site growing in deep vernal pools and swales with associate species *Lasthenia glabrata*, *Ranunculus bonariensis* var. *trisepalus*, Great Valley popcornflower (*Plagiobothrys stipitatus*), and coyote-thistle (*Eryngium vaseyi),* among others, in 2008 (CDFW 2020).
Navarretia myersii ssp. *myersii*	pincushion navarretia	None/None/ 1B.1	Vernal pools; often acidic/annual herb/Apr–May/65–1,080	**Low potential to occur.** Although vernal pool habitat and acidic soils are present on site, this species is only known from one historical CNDDB occurrence in the region[1] (CDFW 2020). This 1957 occurrence recorded the species approximately 7 miles northeast of the project site and north of the Calaveras River (CDFW 2020).

Special-Status Plant Species' Potential to Occur within the Project Site

Scientific Name	Common Name	Status (Federal/State/ CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Navarretia paradoxiclara	Patterson's navarretia	None/None/ 1B.3	Meadows and seeps; Serpentinite, openings, vernally mesic, often drainages/annual herb/May–June(July)/490–1,410	**Not expected to occur.** The project site is below the elevational range of this species.
Sagittaria sanfordii	Sanford's arrowhead	None/None/ 1B.2	Marshes and swamps (assorted shallow freshwater)/perennial rhizomatous herb (emergent)/May–Oct(Nov)/0–2,130	**Not expected to occur.** No perennial aquatic habitat is present within the Project site.
Symphyotrichum lentum	Suisun Marsh aster	None/None/ 1B.2	Marshes and swamps (brackish and freshwater)/perennial rhizomatous herb/(Apr)May–Nov/0–1,000	**Not expected to occur.** No marsh and swamp habitat is present within the Project site.
Tuctoria greenei	Greene's tuctoria	FE/SR/1B.1	Vernal pools/annual herb/May–July(Sep)/95–3,510	**Low potential to occur.** Although vernal pool habitat is present on site, this species is only known from one CNDDB occurrence in the region[1] (CDFW 2020). This 1987 occurrence, which is now considered extirpated, recorded the species growing within vernal pools approximately 5 miles south of the Project site (CDFW 2020).

1 Region is defined as the USGS 7.5 minute quadrangle in which the project is located ("Linden, CA"), and the eight surrounding USGS 7.5 minute quadrangles ("Clements, Farmington, Lockeford, Peters, Stockton East, Valley Springs SW, Wallace, and Waterloo").
2 Vicinity is defined as the USGS 7.5 minute "Linden, CA" quadrangle in which the project is located.

Appendix E

Special-Status Wildlife Species' Potential to Occur within the Project Site

Special-Status Wildlife Species' Potential to Occur within the Project site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			Amphibians	
Ambystoma californiense	California tiger salamander	FT/ST, WL	Annual grassland, valley–foothill hardwood, and valley–foothill riparian habitats; vernal pools, other ephemeral pools, and (uncommonly) along stream courses and man-made pools if predatory fishes are absent	**Moderate potential to occur.** Although the wetlands on site are unlikely to be inundated for a long enough period to support breeding populations, a review of aerial imagery shows a potentially suitable breeding pond located approximately 0.3-mile north of the Project site. The Project site provides only marginal aestivation habitat due to a scarcity of small mammal burrows, confined to the northwestern portion of the Project site. However, California ground squirrels or other small mammals could move onto the site at some point in the future which would increase the value of the site for aestivation. This species is known from the vicinity[2]. The closest CNDDB occurrences recorded this species approximately 1.4 miles northwest of the Project site in a large vernal pool complex within grazed grassland (CDFW 2020). The closest CNDDB occurrences recorded this species approximately 1.4 miles northwest of the Project site in a large vernal pool complex within grazed grassland (CDFW 2020). The area between that CNDDB occurrence and the Project site is largely occupied by orchards and row crops, which may limit movement of California tiger salamanders. Another CNDDB occurrence is located approximately 1.7 miles south of the Project site in grazed grassland.
Rana draytonii	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	**Not expected to occur.** This species is not known from the region[1]. Moreover, wetlands on site are not likely to support this species due to a lack of emergent vegetation.
Spea hammondii	western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3	**High potential to occur.** Suitable grassland and wetland habitat is present on site, and this species is known from the vicinity[2] (CDFW 2020). The closest CNDDB occurrence

Special-Status Wildlife Species' Potential to Occur within the Project site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	recorded the species near Calaveras River and Mormon Slough approximately 1.5 miles north of the Project site (CDFW 2020).
Reptiles				
Actinemys marmorata	northwestern pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**Not expected to occur.** No perennial aquatic habitat is present within the Project site.
Thamnophis gigas	giant garter snake	FT/ST	Freshwater marsh habitat and low-gradient streams; also uses canals and irrigation ditches	**Not expected to occur.** No perennial aquatic habitat is present within the Project site.
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	**High potential to occur.** Suitable foraging habitat is present, although this species would be unlikely to nest within the wetlands on site due to insufficient emergent vegetation. The closest CNDDB occurrence recorded this species nesting in Himalayan blackberry (*Rubus armeniacus*) and thistle thicket approximately 2 miles northeast of the Project site, although this habitat was eliminated in 1997 (CDFW 2020).
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	**Moderate potential to occur.** This species is not known to occur within the vicinity[2] but is present in the region[1] (CDFW 2020). Potentially suitable nesting and foraging habitat is present on site. The closest CNDDB occurrence recorded several colonies along the banks of Duck Creek located over 5 miles southeast of the Project site (CDFW 2020).
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby	**High potential to occur.** Although nesting trees are absent from the Project site, this species could potentially utilize the transmission towers and/or riparian and residential

Special-Status Wildlife Species' Potential to Occur within the Project site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			grasslands and agricultural areas such as wheat and alfalfa fields and pasture	trees in the vicinity[2] for nesting and could potentially forage on site. The closest CNDDB occurrence recorded this species nesting near Bellota (CDFW 2020).
Circus hudsonius	Northern harrier	None/SSC	Ground-nester in a variety of open habitats including wet meadows, seasonal wetlands, marshes, and row crops within grasslands and agricultural fields	**Moderate potential to occur.** Although no nesting habitat occurs within the project, this species could forage within and adjacent to the project. There are no CNDDB occurrences within 5-miles of the project
Elanus leucurus	white-tailed kite	None/FP	Nests in tall shrubs and trees, often in riparian areas; forages in grasslands, agricultural fields and marshes.	**Moderate potential to occur.** Although no nesting habitat occurs within the project, this species could forage within and adjacent to the project. There are no CNDDB occurrences within 5-miles of the project
Lanius ludovicianus	loggerhead shrike	None/SSC	Forages in open grassland habitats throughout the Central Valley of California; often breed in open areas dominated by grasses and/or forbs, interspersed with shrubs, trees and bare ground.	**Moderate potential to occur.** Although no nesting habitat occurs within the project, this species could forage within and adjacent to the project. There are no CNDDB occurrences within 5-miles of the project
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	**Not expected to occur.** No riparian habitat is present within the Project site.
Riparia riparia (nesting)	bank swallow	None/ST	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	**Low potential to occur.** Although potentially suitable foraging habitat is present on site, this species is only known from one CNDDB occurrence in the region[1] (CDFW 2020). This 2009 occurrence recorded the species nesting in the bank of the Mokelumne River (CDFW 2020).
Setophaga petechia (nesting)	yellow warbler	BCC/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	**Not expected to occur.** No riparian, chaparral, or woodland habitat is present on site.

Special-Status Wildlife Species' Potential to Occur within the Project site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
			Fishes	
Mylopharodon conocephalus	hardhead	None/SSC	Low- to mid-elevation streams in the Sacramento–San Joaquin drainage; also present in the Russian River	**Not expected to occur.** No riverine habitat present on site.
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	FT/None	Flowing water in the Sacramento and San Joaquin rivers and their tributaries	**Not expected to occur.** No riverine habitat present on site.
			Mammals	
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	**Low potential to occur.** Although suitable foraging habitat is present on site, this species is only known from one CNDDB occurrence in the region[1] (CDFW 2020). This 1951 occurrence recorded the species near Farmington (CDFW 2020).
			Invertebrates	
Branchinecta conservatio	Conservancy fairy shrimp	FE/None	Larger, more turbid vernal pools, playa pools	**Not expected to occur.** The Project site is outside of the current known range of this species. Moreover, vernal pools of the Project site are not expected to support this species.
Branchinecta lynchi	vernal pool fairy shrimp	FT/None	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	**High potential to occur.** Suitable vernally mesic wetlands are present on site. The closest CNDDB occurrence recorded this species in a drainage, swales, and vernal pools within grazed non-native grassland located approximately 1.3 miles south of the Project site (CDFW 2020).
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT/None	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus nigra ssp. caerulea)	**Not expected to occur.** No blue elderberry shrubs were present within the Project site at the time of the field survey. The CNDDB lists several occurrences along the Calaveras River approximately 3 miles north of the Project site (CDFW 2020).

Special-Status Wildlife Species' Potential to Occur within the Project site

Scientific Name	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Lepidurus packardi	vernal pool tadpole shrimp	FE/None	Ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales	**High potential to occur.** Suitable vernally mesic wetlands are present on site. The closest CNDDB occurrence recorded this species in a vernal pool complex within grazed non-native grassland located approximately 1.3 miles south of the Project site (CDFW 2020).

1 Region is defined as the USGS 7.5 minute quadrangle in which the project is located ("Linden, CA"), and the eight surrounding USGS 7.5 minute quadrangles ("Clements, Farmington, Lockeford, Peters, Stockton East, Valley Springs SW, Wallace, and Waterloo").
2 Vicinity is defined as the USGS 7.5 minute "Linden, CA" quadrangle in which the project is located.

Appendix F

Biological Resources Technical Report; Pacific Gas & Electric Company – Bellota Substation 115kV Pad Expansion Project, San Joaquin County, California

BIOLOGICAL RESOURCES TECHNICAL REPORT

PACIFIC GAS & ELECTRIC COMPANY - BELLOTA SUBSTATION 115 KV PAD EXPANSION PROJECT, SAN JOAQUIN COUNTY, CALIFORNIA

PREPARED FOR:

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July 2021

Table of Contents

1.0 INTRODUCTION

This Biological Resources Technical Report (BRTR) has been prepared for the PG&E Bellota Substation 115 kV Pad Expansion ("project") in San Joaquin County, California. The purpose of this BRTR is to identify and characterize existing on-site biological resources, with particular focus on the potential of the site to support special-status plant and wildlife species and other sensitive resources, such as wetlands and other aquatic features, and wildlife movement corridors.

2.0 PROJECT LOCATION

The project is located at 24300 East Flood Road, Linden, CA 95236 (Appendix A Figure 1) in San Joaquin County. The project location is accessed from Golden State Highway (99) via State Route 26. From Highway 99, take State Route 26 east for approximately 13 miles. Turn south on Escalon Bellota Road and then west on Flood Road. The project is located within the United States Geological Service (USGS) 7.5-minute quad name Linden, in township 2N, range 9E and section 19-20 and the approximate center of the project is coordinates latitude 38.015134, longitude -121.019682.

3.0 PROJECT DESCRIPTION

3.1 PROJECT NEED

North Central Valley Energy Storage, LLC, a wholly owned subsidiary of NextEra Energy Resources (NEER), proposed to develop, construct, and operate the North Central Valley Energy Center located in San Joaquin County, California. The North Central Valley Energy Center project consists of a 132-megawatt (MW) battery energy storage system (BESS) which will include battery storage containers and associated on-site support facilities including a project collector substation, inverters, collector lines, fencing, access roads, operations and maintenance building, a supervisory control and data acquisition (SCADA) system, and other ancillary facilities and equipment.

3.2 PG&E BELLOTA SUBSTATION 115 KV PAD EXPANSION PROJECT

The North Central Valley Energy Center project includes a 115-kilovolt (kV) overhead generation transmission line (gen-tie line), to connect the BESS to the adjacent PG&E Bellota Substation (Appendix A, Figure 1). An expansion of the Bellota Substation footprint to include a new 115 kV pad and switchgear, which is the focused project for this BRTR, would be required to support grid interconnection. Because there is not sufficient area within the existing substation footprint to install the new 115 kV switchgear, an expansion to the existing Bellota Substation of approximately 2.5 acres would be required (Appendix A, Figure 2). The specifications and layout of the required facilities would be engineered, constructed (or caused to be constructed), owned, and maintained by PG&E.

3.2.1 Construction Activities

Construction of this substation expansion would be primarily composed of the following activities:

- **Site Preparation:** Rough grading of 2.5 acres may be performed where required to accommodate the support structures and access roads. Installation of a retaining structure may be required in some areas to accomplish final grades within the extents of PG&E property. Perimeter drainage ditches would be created for hydrologic control. A temporary staging area would be constructed to hold materials and construction equipment within the project site or internal to the approximately 18-acre PG&E switchyard development footprint. site preparation and grading would involve the use of a grader, a backhoe, and a dozer.

- **Fencing and Security Wall:** An approximately 13-foot-tall pre-cast concrete security wall and foundations would be installed.

- **Foundation Construction and Aboveground Equipment Installation:** Following site preparation, construction of the switchyard equipment foundations and the ground grid will commence. Foundation construction will commence with excavation activities that will be accomplished primarily by backhoes and drill rigs. Forms, reinforcing steel, and concrete will then be installed, as appropriate, to build the foundations. Once the foundation work has been finished, placement of major electric equipment on their respective foundations or structures, inclusive of anchoring in their final position and wiring of the equipment controls and protection devices, will be completed. This work will be accomplished by delivering equipment to the site on flatbed trucks and lifting it into place using cranes.

- **Cleanup:** All areas that are temporarily disturbed by construction activities will be restored to preconstruction conditions, to the extent practical, following the completion of construction.

- **Site Restoration:** Site restoration will begin immediately after construction activities have been completed and consist of removing any construction debris, performing corrective grading where required. Hydroseeding using an appropriate native seed mix will be applied at temporarily disturbed areas within the project footprint, as described in the Stormwater Pollution Prevention Plan (SWPPP). BMPs for erosion control will be installed as appropriate.

3.2.2 Construction Schedule

The project would occur between April 1, 2022 through February 28, 2023. The project would require up to 11 months to complete. Construction is anticipated to be conducted Monday through Friday over 8-hour or 10-hour workdays. The schedule is dependent on receiving all necessary approvals, weather, and site conditions at the time of construction. Overtime and weekend work would be used only as necessary to meet schedule, electrical clearance, and safety requirements, and would comply with applicable California labor laws.

4.0 METHODS

Information regarding biological and potentially jurisdictional resources present within the project site was obtained through a review of pertinent literature, publicly available natural resource databases, and other information, as well as a biological field survey; all are described in detail below.

4.1 LITERATURE AND DATABASE REVIEW

Special-status biological resources present or potentially present on the project site were identified through a literature search using the following sources: United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Trust Resource Report (USFWS 2020), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2020), and the California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants (CNPS 2020). Stantec also reviewed current and historical aerial photography (Google Earth Pro 2020) to identify any potentially jurisdictional wetlands or other waters based on aerial signatures and reviewed the U.S. Department of Agriculture's Web Soil Survey to identify soil types mapped on the project site (USDA 2020).

4.2 BIOLOGICAL FIELD SURVEYS

On January 21, 2020 Stantec biologists Brendan Cohen and Leticia Morris conducted a ground-level reconnaissance survey for special-status species and aquatic resources within the amended survey area around the Bellota Substation. The reconnaissance-level surveys were conducted to characterize habitats in the study area, identify aquatic resources that may be subject to regulatory agency jurisdiction (e.g., U.S. Army Corps of Engineers [Corps], and CDFW), assess potential for special-status species to occur, and to record observations of special-status species, if found. The study area includes approximately 7.88 acres, which encompasses the area from the substation west to the property line fence. Stantec biologists conducted the survey on site from approximately 9:00 am until 11:30 am. The temperature was 57 degrees Fahrenheit with overcast skies and light rain showers.

The current survey area lies immediately adjacent to the PG&E Bellota Substation project area associated with the PG&E Bellota-Warnerville 230 kV Reconductoring project. For that project, a thorough desktop analysis and field assessment of the biological resources in the project area vicinity were performed and was used as a reference for this BRTR. Following the survey performed on January 21, 2020, the habitat present and the occurrence potential for special-status species in the survey area are described below.

5.0 RESULTS

5.1 SITE DESCRIPTION

Annual grassland habitat is the primary habitat type in the survey area which is dominated by the following species: medusahead (*Elymus caput-medusae*), narrow tarplant (*Holocarpha virgata*), soft chess (*Bromus hordeaceus*), rush (*Juncus* sp.), wild oats (*Avena* sp.), curly dock *(Rumex crispus*), big heron bill (*Erodium*

botrys), seaside barley (*Hordeum marinum*), and foxtail barley (*Hordeum murinum*). No additional habitat types were observed within the survey area, as depicted in the Appendix B Site Photos.

No special-status plant or animal species were observed during the reconnaissance-level biological survey, however suitable habitat for several special-status species is present. The annual grasslands in the survey area provides suitable habitat for a variety of special-status species that occur in annual grasslands shown in Table 1 and Table 2 below. Special-status bird species have the potential to occur in the study area; the grassland habitat provides potential foraging habitat for raptors and other migratory species. Although there are no trees located within the survey area, the large transmission towers onsite may provide suitable nesting habitat for some raptor species.

5.2 WETLANDS AND OTHER WATERS

Two seasonal wetland swales (SWS-10a and SWS-10b) and one ephemeral drainage (ED-02b) were observed within the survey area as shown in Appendix A Figure 3. These aquatic features are subject to potential jurisdiction by the Corps, Regional Water Quality Control Board and/or the CDFW which may require permit applications for any potential temporary or permanent impacts to these features.

5.3 SPECIAL-STATUS PLANTS

Results of USFWS, CNDDB, and CNPS searches revealed 16 special-status plant species that have potential to occur or that are known to occur in the project site region. Of these, nine special-status plant species were removed from consideration due to lack of suitable habitat within or adjacent to the project site or because the site is outside of the species' known geographic or elevation range. The remaining seven special-status plant species have some potential to occur on the project site and are shown in Table 1.

Table 1. Special-Status Plant Species with Potential to Occur in the Survey area

Common Name *Scientific Name*	Listing Status[1] (Fed/State)	Habitat Requirements	Potential to Occur
Valley brodiaea *Brodiaea rosea* ssp. *vallicola*	-/4.2	Valley brodiaea is a perennial bulbiferous herb found in swales and vernal pools within Valley and foothill grassland between 30 and 1,095 feet amsl, often on old alluvial terraces and silty, sandy, and gravelly loam. It blooms April through May, and less often through June	**Low potential to occur**. This species is not known to occur within the vicinity but is present in the region. Potentially suitable grassland and vernal swale/pool habitats are present on site; however, there are no CNDDB occurrences within 5-miles of the project.

Common Name *Scientific Name*	Listing Status[1] (Fed/State)	Habitat Requirements	Potential to Occur
Succulent owl's-clover *Castilleja campestris* var. *succulenta*	FT/SE, 1B.2	Succulent owl's-clover is an annual, hemiparasitic herb found in often acidic vernal pools between 160 and 2,460 feet amsl. It blooms April through May, and less often March through May	**Unlikely to occur**. No vernal pool habitat and acidic soils are present within the survey area; there are no CNDDB occurrences within 5-miles of the project.
Recurved larkspur *Delphinium recurvatu*	-/1B.2	Recurved larkspur is a perennial herb found in alkaline soils in chenopod scrub, cismontane woodland, Valley and foothill grassland between 5 and 2,590 feet amsl. It blooms March through June	**Low potential to occur**. Although grassland habitat is present on site, alkaline soils are absent. There are no CNDDB occurrences within 5-miles of the project.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	-/1B.2	Ahart's dwarf rush is an annual herb found in mesic Valley and foothill grassland between 95 and 750 feet amsl. It blooms March through May.	**Low potential to occur**. Although grassland habitat is present on the site, this species is only known from one CNDDB occurrence in the region; however, there are no occurrences within 5-miles of the project.
Legenere *Legenere limosa*	-/1B.1	Legenere is an annual herb found in vernal pools below approximately 2,885 feet amsl. It blooms April through June.	**Unlikely to occur**. This species is not known to occur within the vicinity but is present within the region. No vernal pool habitat is present within the survey area; however, there no CNDDB occurrences within 5-miles of the project.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	-/1B.1	Pincushion navarretia is an annual herb found in often acidic vernal pools between 65 and 1,080 feet amsl. It blooms April through May.	**Unlikely to occur**. No vernal pool habitat and acidic soils present within the survey area; there are no CNDDB occurrences within 5-miles of the project.
Greene's tuctoria *Tuctoria greenei*	FE/1B.1	Greene's tuctoria is an annual herb found in vernal pools between 95 and 3,510 feet amsl. It blooms May through July.	**Unlikely to occur**. No vernal pool habitat is present on site; there are no CNDDB occurrences within 5-miles of the project.

[1]Federal and State Status Codes: FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered.

5.4 SPECIAL-STATUS WILDLIFE

Results of the USFWS and CNDDB queries revealed 18 special-status wildlife species as present or potentially present in the project region. Of these, eleven species were removed from consideration due to lack of suitable habitat on or adjacent to the project site, or due to the site being outside of the species' known geographic or elevation range. The remaining seven special-status wildlife species have some potential to occur on the project site and are shown in Table 2.

Table 2. Special-Status Species with Potential to Occur in the Survey area

Common Name *Scientific Name*	Listing Status[1] (Fed/State)	Habitat Requirements	Potential to Occur
		Invertebrates	
Conservancy fairy shrimp *Branchinecta conservatio*	FE/-	Larger, more turbid vernal pools, playa pools	**Not expected to occur**. The project is outside of the current known range of this species. In addition, there are no vernal pools within the project site.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/-	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	**Not expected to occur**. Suitable vernally mesic wetlands are note present on the project site. The closest CNDDB occurrence recorded this species in a drainage, swales, and vernal pools within grazed non-native grassland located approximately 1.3 miles south of the project site.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/-	Ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales.	**Not expected to occur**. Suitable vernally mesic wetlands are not present on the project site. The closest CNDDB occurrence recorded this species in a vernal pool complex within grazed non-native grassland located approximately 1.3 miles south of the Project site.
		Amphibians	

Common Name *Scientific Name*	Listing Status[1] (Fed/State)	Habitat Requirements	Potential to Occur
California tiger salamander *Ambystoma californiense*	T/T	Requires seasonally inundated wetland/vernal pools and other ponded habitats for breeding with associated upland terrestrial habitat. Utilizes small mammal burrows within upland habitat.	**Moderate potential to occur**. The project site provides only marginal aquatic habitat due to inundation period and marginal aestivation habitat due to a scarcity of small mammal burrows, confined to the northwestern portion of the project site. This species is known to occur within 5-miles of the project. The closest CNDDB occurrences recorded this species approximately 1.4 miles northwest of the project site in a large vernal pool complex within grazed grassland.
Western spadefoot *Spea hammondii*	–/SSC	Open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, and mountains. Breeding sites include vernal pools and other temporary pools, cattle tanks, and occasionally in pools of intermittent streams. Prefers turbid water with little or no cover.	**High potential to occur**. Suitable grassland and wetland habitat is present on site, and there CNDDB occurrences within 5-miles of the project. The closest CNDDB occurrence recorded the species near Calaveras River and Mormon Slough approximately 1.5 miles north of the project site.
		Birds	
Western burrowing owl *Athene cunicularia*	–/SSC	Grasslands and ruderal habitats. Uses mammal burrows or other suitable underground cavities.	**Moderate potential to occur**. Potentially suitable nesting and foraging habitat is present on site; however, there are no CNDDB occurrences within 5-miles of the project.

Common Name *Scientific Name*	Listing Status[1] (Fed/State)	Habitat Requirements	Potential to Occur
Swainson's hawk *Buteo swainsoni*	–/T	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain.	**High potential to occur**. Although nesting trees are absent from the Project site, this species could potentially utilize the transmission towers and/or riparian and residential trees in the vicinity for nesting and could potentially forage on site. There is one CNDDB occurrences within 5-miles of the project, located approximately 4.5 miles northwest of the project.
Northern harrier *Circus hudsonius*	–/SSC	Ground-nester in a variety of open habitats including wet meadows, seasonal wetlands, marshes, and row crops within grasslands and agricultural fields.	**Moderate potential to occur**. Although no nesting habitat occurs within the project, this species could forage within and adjacent to the project. There are no CNDDB occurrences within 5-miles of the project.
White-tailed kite *Elanus leucurus*	–/FP	Nests in tall shrubs and trees, forages in grasslands, agricultural fields and marshes.	**Moderate potential to occur**. Although no nesting habitat occurs within the project, this species could forage within and adjacent to the project. There are no CNDDB occurrences within 5-miles of the project.
Loggerhead shrike *Lanius ludovicianus*	–/SSC	Forages in open grassland habitats throughout the Central Valley of California; often breed in open areas dominated by grasses and/or forbs, interspersed with shrubs, trees and bare ground.	**Moderate potential to occur**. Although no nesting habitat occurs within the project, this species could forage within and adjacent to the project. There are no CNDDB occurrences within 5-miles of the project.

[1]Federal and State Status Codes: T = Threatened; FP = Fully Protected; SSC= Species of Special Concern.

Results of the reconnaissance-level biological survey indicate that the wildlife species that are unlikely to occur in the survey area include giant garter snake (*Thamnophis gigas*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), conservancy fairy shrimp, vernal pool fairy shrimp and vernal pool tadpole shrimp due to the absence of suitable habitat (fresh emergent vegetation, elderberry shrub [*Sambucus* sp.] habitat, and vernal pool habitats, respectively) to support these species.

5.5 PG&E'S SAN JOAQUIN VALLEY HABITAT CONSERVATION PLAN

The Project falls within the coverage area for the PG&E San Joaquin Valley Habitat Conservation Plan (SJVHCP) and is eligible for coverage under the approved Covered Activities. The following SJVHCP general and species-specific avoidance and minimization measures, along with non-SJVHCP measures and best management practices (BMPs), will be utilized throughout the project to ensure that direct and indirect impacts to waters of the U.S. (WOTUS) and sensitive plant and wildlife species are minimized as a result of project activities.

To minimize impacts to special-status species, the project will implement the following avoidance and minimization measures (AMMs):

AMM-1. Employees and contractors performing O&M activities will receive ongoing environmental education. Training will include review of environmental laws and guidelines that must be followed by all personnel to reduce or avoid effects on covered species during O&M activities.

AMM-2. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.

AMM-3. The development of new access and ROW roads by PG&E will be minimized and clearing vegetation and blading for temporary vehicle access will be avoided to the extent practicable.

AMM-4. Vehicles will not exceed a speed limit of 15 mph in the ROWs or on unpaved roads within sensitive land-cover types.

AMM-5. Trash dumping, firearms, open fires (such as barbecues) not required by the O&M activity, hunting, and pets (except for safety in remote locations) will be prohibited in O&M work activity sites.

AMM-6. No vehicles will be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.

AMM-7. During any reconstruction of existing overhead electric facilities in areas with a high risk of wildlife electrocution (e.g., nut/fruit orchards, riparian corridors, areas along canal or creek banks, PG&E's raptor concentration zone [RCZ]), PG&E will use insulated jumper wires and bird/animal guards for equipment insulator bushings or will construct lines to conform to the latest revision of PG&E's Bird and Wildlife Protection Standards.

AMM-8. During fire season in designated State Responsibility Areas (SRAs), all motorized equipment will have federal or state approved spark arrestors; a backpack pump filled with water and a shovel will be carried on all vehicles; and fire-resistant mats and/or windscreens will be used when welding. In addition, during fire

"red flag" conditions as determined by California Department of Forestry (CDF), welding will be curtailed, each fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all equipment parking and storage areas will be cleared of all flammable materials.

AMM-9. Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, and habitat occupied by covered animal and plant species when O&M activities are the source of potential erosion problems.

AMM-10. If an activity disturbs more than 0.25 acre in a grassland, and the landowner approves or it is within PG&E rights and standard practices, the area should be returned to pre-existing conditions and broadcast-seeded using a commercial seed mix. Seed mixtures/straw used for erosion control on projects of all sizes within grasslands will be certified weed-free. PG&E shall not broadcast seed (or apply in other manner) any commercial seed or seed-mix to disturbance sites within other natural land-cover types, within any vernal pool community, or within occupied habitat for any plant covered-species.

AMM-15. If vernal pools are present, a qualified biologist will stake and flag an exclusion zone prior to O&M activities. The exclusion zone will encompass 250 feet. Work will be avoided after the first significant rain until June 1, or until pools remain dry for 72 hours.

AMM-17. If suitable habitat for covered amphibians and reptiles is present and protocol-level surveys have not been conducted, a qualified biologist will conduct preconstruction surveys prior to O&M activities involving excavation. If necessary, barrier fencing will be constructed around the worksite to prevent reentry by the covered amphibians and reptiles. A qualified biologist will stake and flag an exclusion zone of 50 feet around the potentially occupied habitat. No monofilament plastic will be used for erosion control in the vicinity of listed amphibians and reptiles. Barrier fencing will be removed upon completion of work. Crews will also inspect trenches left open for more than 24 hours for trapped amphibians and reptiles. A qualified biologist will be contacted before trapped amphibians or reptiles (excluding blunt nosed leopard lizard and limestone salamander) are moved to nearby suitable habitat.

AMM-18. If western burrowing owls are present at the site, a qualified biologist will work with O&M staff to determine whether an exclusion zone of 160 feet during the non-nesting season and 250 feet during the nesting season can be established. If it cannot, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.

AMM-19. If a Swainson's hawk nest or white-tailed kite nest is known to be within 0.25 mile of a planned worksite, a qualified biologist will evaluate the effects of the planned O&M activity. If the biologist determines that the activity would disrupt nesting, a buffer and limited operation period (LOP) during the nesting season (March 15–June 30) will be implemented. Evaluations will be performed in consultation with the local DFG representative.

AMM-22. All vegetation management activities will implement the nest protection program to avoid and minimize effects on Swainson's hawk, white-tailed kite, golden eagle, bald eagle, and other nesting birds. Additionally, trained pre-inspectors will use current data from DFG and CNDDB and professional judgment to

determine whether active Swainson's hawk, golden eagle, or bald eagle nests are located near proposed work. If pre-inspectors identify an active nest near a proposed work area, they will prescribe measures to avoid nest abandonment and other adverse effects to these species, including working the line another time of year, maintaining a 500-foot setback, or if the line is in need of emergency pruning, contacting HCP Administrator.

AMM-23. If medium or large disturbance covered activities take place within 0.5 miles of an active breeding colony of tricolored blackbirds or bank swallows or a small disturbance covered activities take place within 350 feet of an active breeding colony of these species a qualified biologist will evaluate the site prior to work during the breeding season (April 1-July 31). If an active colony of either species could be disrupted by the covered activity, the biologist will stake and flag an exclusion zone of at least 350 feet around the colony prior to O&M activities at the site. This exclusion zone will be established in the field based on site conditions, the covered activity, and professional judgment by a qualified PG&E biologist and will be greater than the minimum distance. Work will not occur in this exclusion zone during April 1–July 31.

AMM-29. No herbicide will be applied within 100 feet of exclusion zones, except when applied to cut stumps or frilled stems or injected into stems.

5.5.1.1 Non-SJVHCP Measures

BIO-WTR2. Work should be conducted during dry conditions. Avoid work in and/or accessing through adjacent water or seasonal wetland.

5.5.1.2 Best Management Practices

BMP 2: Vehicular/equipment refueling and use of chemicals are prohibited within 100 feet of a wetland or drainage, unless secondary containment is constructed (e.g., a berm and lined refueling area). Proper spill prevention and cleanup equipment will be maintained in all refueling areas.

BMP 3: Potential waters occurring in the project area that are to be avoided shall be clearly flagged or otherwise marked prior to the start of work.

BMP 4: If necessary, to ensure that no material is discharged into waters, silt fencing or other appropriate BMPs shall be installed per the direction of a qualified biologist.

BMP 5: Work within or near waters will be conducted during dry conditions.

BMP 6: The project shall be in compliance with all permits issued under the Clean Water Act.

6.0 REFERENCES

CDFW. 2020a. California Natural Diversity Database (CNDDB). RareFind, Version 5. (Commercial Subscription). Sacramento, California: CDFW, Biogeographic Data Branch. Accessed July 2020. http://www.dfg.ca.gov/ biogeodata/cnddb/mapsanddata.asp

CNPS (California Native Plant Society). 2020. *Inventory of Rare and Endangered Plants of California* (online edition, v8-02). Sacramento, California: CNPS, Rare Plant Program. Accessed July 2020. http://www.rareplants.cnps.org.

USDA (U.S. Department of Agriculture). 2020a. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. Accessed July 2020. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.

United States Fish and Wildlife Service. 2020. IPaC (Information for Planning and Consultation). Accessed August 2020. https://ecos.fws.gov/ipac/.

APPENDIX A – FIGURES

V:\185704128_BellotaSubstation\03_data\gis_cad\gis\mxd\Fig_1_ProjectVicinity.mxd Revised: 2021-07-06 By: pglendening

0 0.25 0.5 Miles

1:24,000 (at original document size of 8.5x11)

Stantec

Project Location
T2.0N, R9.0E, S20
USGS 7.5 min
Quad Map: Linden

185704128
Prepared by PG on 2020-06-27
Technical Review by SC on 2021-06-27

Client/Project

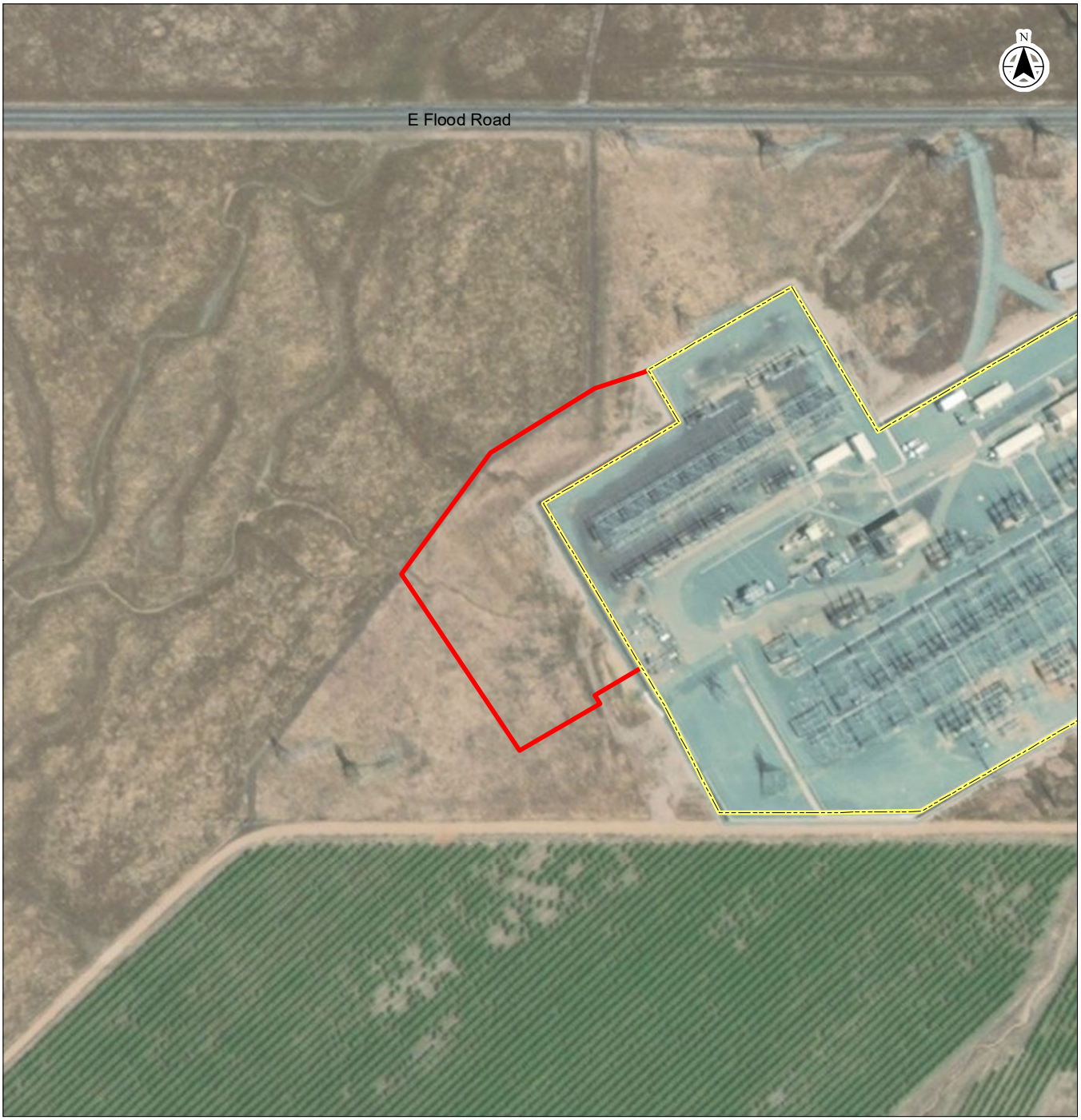
Pacific Gas and Electric Company
Bellota Substation 115kV Pad Expansion Project

Figure No.
1

Title
Project Vicinity

Notes
1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey,

V:\1857\Active\185704128_BellotaSubstation\03_data\gis_cad\gis\mxd\Fig_2_ProjectComponents.mxd Revised: 2021-07-06 By: pglendening



Substation Expansion Area

Existing Bellota Substation

0 100 200 Feet

1:2,400 (at original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Stantec

Project Location
T2.0N, R9.0E, S20
USGS 7.5 min
Quad Map: Linden

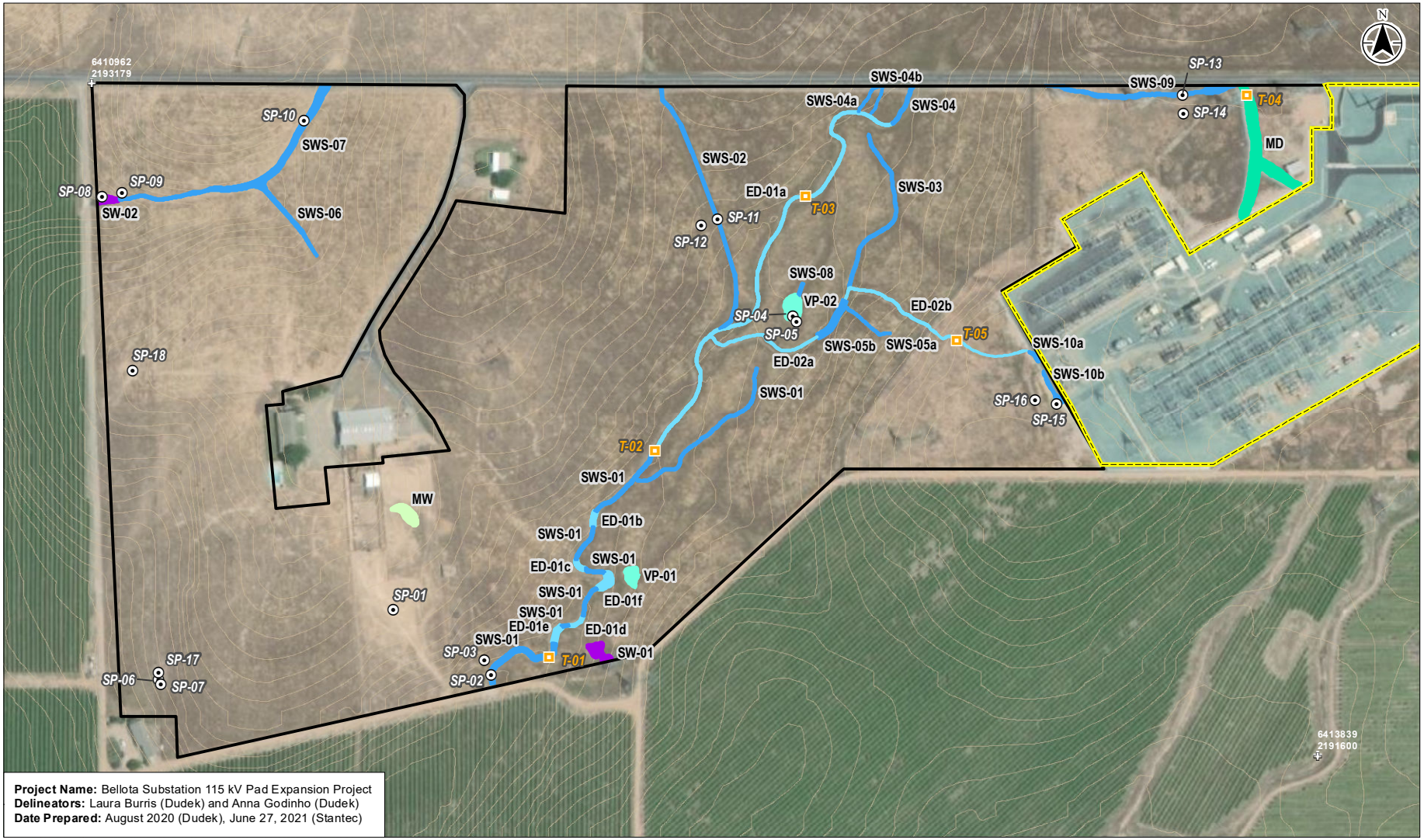
185704128
Prepared by PG on 2020-06-27
Technical Review by SC on 2021-06-27

Client/Project

Pacific Gas and Electric Company
Bellota Substation 115kV Pad Expansion Project

Figure No.
2

Title
Project Components



Project Name: Bellota Substation 115 kV Pad Expansion Project
Delineators: Laura Burris (Dudek) and Anna Godinho (Dudek)
Date Prepared: August 2020 (Dudek), June 27, 2021 (Stantec)

Aquatic Resources Delineation Study Area
Bellota Substation
Sample Point
Transect
Culvert 2Ft; Rock Culvert
Control Points

Potentially Jurisdictional Aquatic Resources

Non-wetland Waters
- Ephemeral Drainages (RWQCB/CDFW) [0.232 acre]
- Human-made Drainage [0.223 acre]

Wetlands
- Seasonal Wetland (ACOE/RWQCB/CDFW) [0.056 acre]
- Seasonal Wetland Swales (ACOE/RWQCB/CDFW) [0.692 acre]
- Vernal Pools (ACOE/RWQCB/CDFW) [0.078 acre]

Non-Jurisdictional Features
- Human-made Wetland [0.038 acre]

0 200 400 Feet
1:4,200 (at original document size of 8.5x11)

Stantec

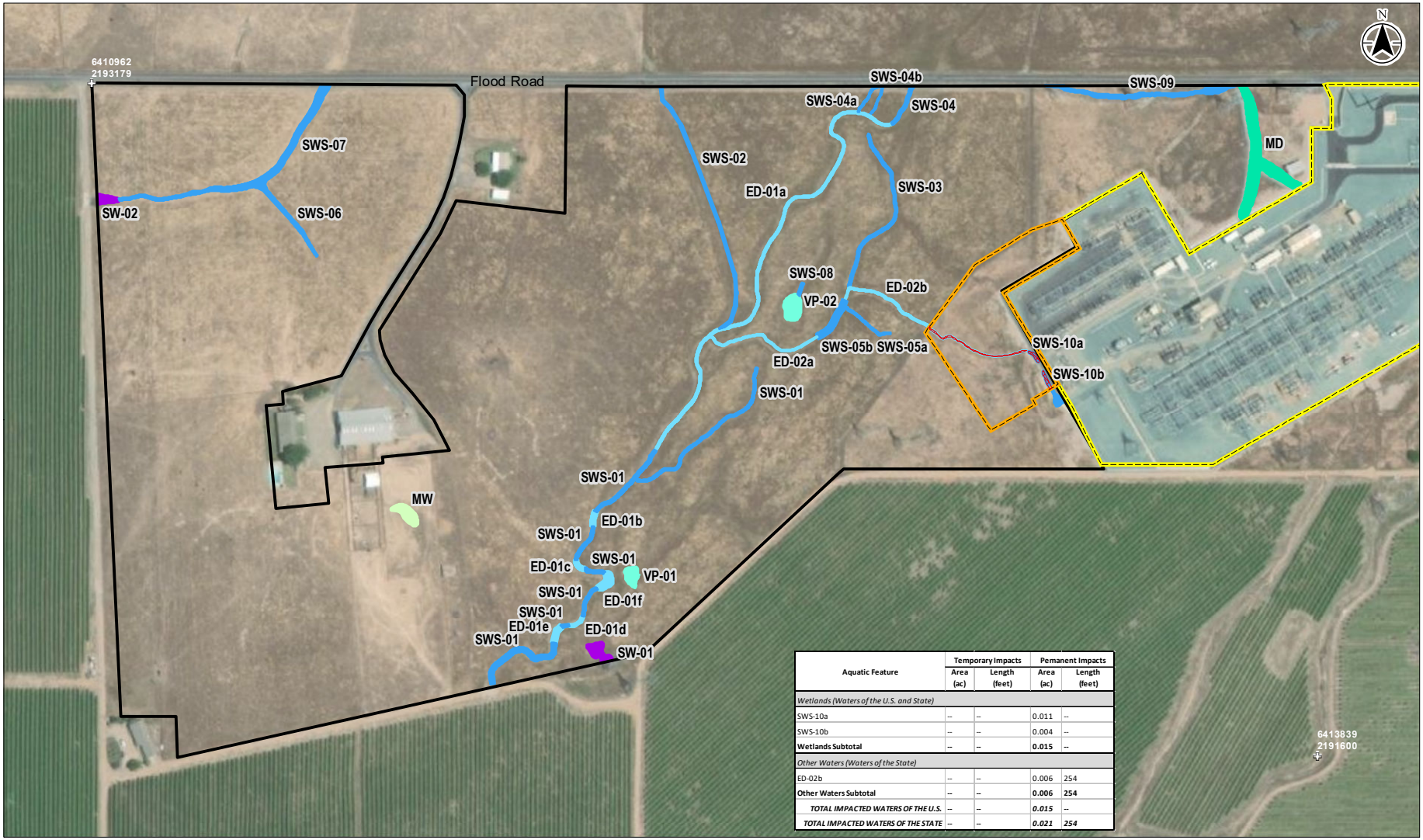
Project Location
T2.0N, R9.0E, S20
USGS 7.5 min
Quad Map: Linden

185704128
Prepared by PG on 2020-06-27
Technical Review by SC on 2021-06-27

Client/Project
Pacific Gas and Electric Company
Bellota Substation 115 kV Pad Expansion Project

Figure No.
3

Title
Aquatic Resources in the Project Area



Aquatic Feature	Temporary Impacts Area (ac)	Temporary Impacts Length (feet)	Permanent Impacts Area (ac)	Permanent Impacts Length (feet)
Wetlands (Waters of the U.S. and State)				
SWS-10a	--	--	0.011	--
SWS-10b	--	--	0.004	--
Wetlands Subtotal	--	--	**0.015**	--
Other Waters (Waters of the State)				
ED-02b	--	--	0.006	254
Other Waters Subtotal	--	--	**0.006**	**254**
TOTAL IMPACTED WATERS OF THE U.S.	--	--	***0.015***	--
TOTAL IMPACTED WATERS OF THE STATE	--	--	***0.021***	***254***

Project Area
Aquatic Resources Delineation Study Area
Bellota Substation
Permanent Impact
Control Points

Potentially Jurisdictional Aquatic Resources

Non-wetland Waters
- Ephemeral Drainages (RWQCB/CDFW) [0.232 acre]
- Human-made Drainage [0.223 acre]

Wetlands
- Seasonal Wetland (ACOE/RWQCB/CDFW) [0.056 acre]
- Seasonal Wetland Swales (ACOE/RWQCB/CDFW) [0.692 acre]
- Vernal Pools (ACOE/RWQCB/CDFW) [0.078 acre]

Non-Jurisdictional Features
- Human-made Wetland [0.038 acre]

0 200 400 Feet
1:4,200 (at original document size of 8.5x11)

Stantec

Project Location
T2.0N, R9.0E, S20
USGS 7.5 min
Quad Map: Linden

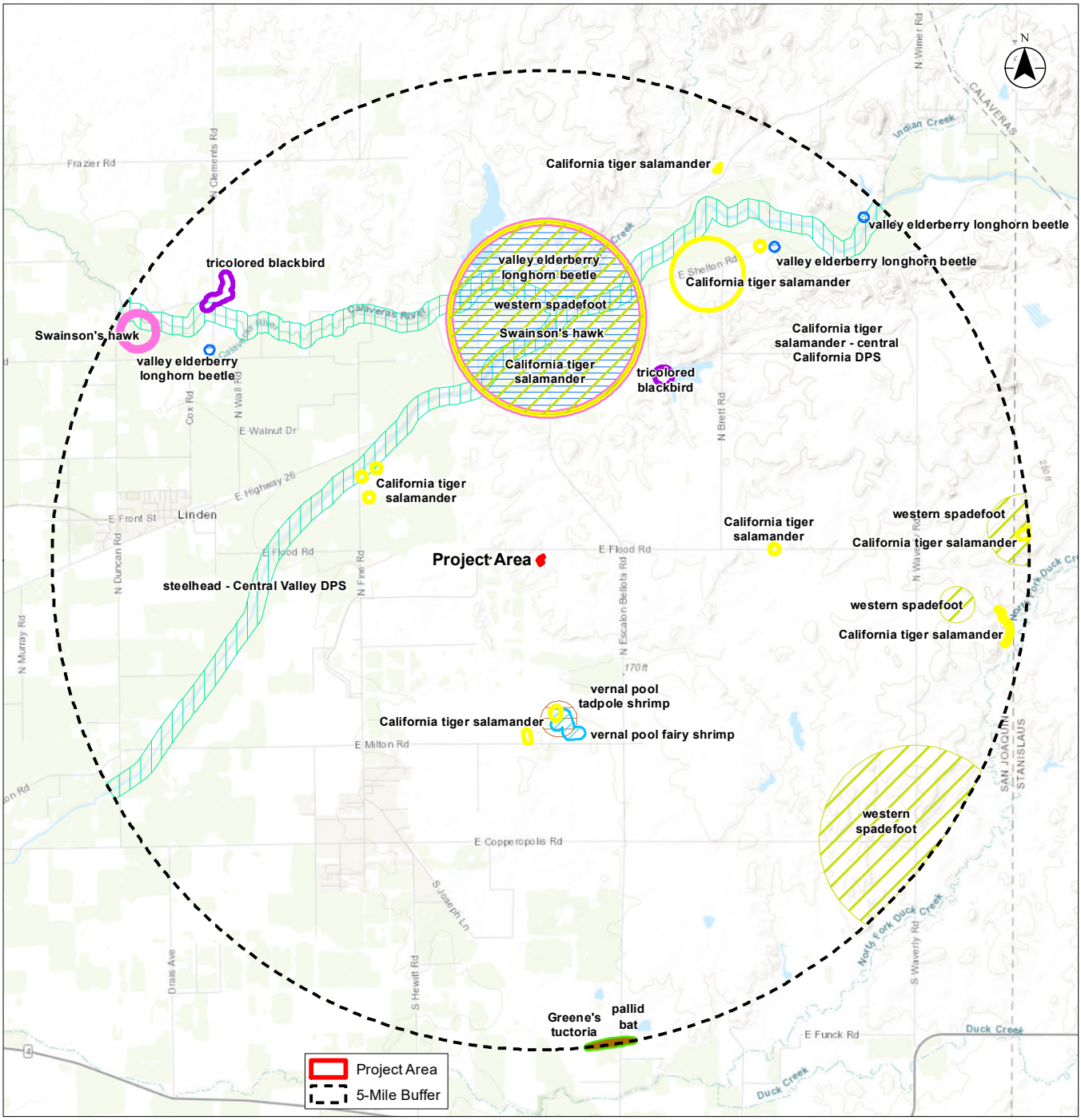
185704128
Prepared by PG on 2020-06-27
Technical Review by SC on 2021-06-27

Client/Project
Pacific Gas and Electric Company
Bellota Substation 115 kV Pad Expansion Project

Figure No.
4

Title
Potential Impacts to Aquatic Resources in the Project Area

V:\1857\Active\185704128 Bellota Substation\03 data\gis_cad\gis\mxd\Fig 5 CNDDB.mxd Revised: 2021-07-24 By: pglendening



CNDDB Occurrences

- California tiger salamander - central California DPS
- Greene's tuctoria
- Swainson's hawk
- pallid bat
- steelhead - Central Valley DPS
- tricolored blackbird
- valley elderberry longhorn beetle
- vernal pool fairy shrimp
- vernal pool tadpole shrimp
- western spadefoot

0 1 2 Miles

1:100,238 (at original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
2. Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Stantec

Project Location
T2.0N, R9.0E, S20
USGS 7.5 min
Quad Map: Linden

185704128
Prepared by PG on 2020-07-24
Technical Review by SC on 2021-07-26

Client/Project

Pacific Gas and Electric Company
Bellota Substation 115kV Pad Expansion Project

Figure No.

5

Title

California Natural Diversity Database Species Occurrences within 5 Miles of the Project Area

APPENDIX B - SITE PHOTOS

Photo 1. View of survey area facing southeast.

Photo 2. View of Bellota Substation and survey area facing west.

Photo 3. Vole hole present in survey area.

Photo 4. View of transmission tower facing east.