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Appendix D - Volume 1

Addendum to the Biological Resources Assessment for the Darden Clean Energy Project

Pacific Gas & Electric Company Downstream Network Upgrades Project

Addendum to the Biological Resources Assessment for the Darden Clean Energy Project

prepared for

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Executive Summary

This document provides the findings of a Biological Resources Assessment (BRA) prepared by Rincon Consultants, Inc. (Rincon) for the proposed Pacific Gas & Electric Company Downstream Network Upgrades (PG&E Project) as an addendum to the Darden Clean Energy Project BRA. The PG&E Project consists of the development of downstream network upgrades necessary to accommodate the Darden Clean Energy Project located in Fresno County, California. This assessment was completed to document existing site conditions of three alternative scenarios for fiber line communications (Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line) in Fresno County as well as proposed upgrades at existing PG&E substations in Fresno, Merced, and Kern Counties for the PG&E Project. Rincon conducted a desktop review and reconnaissance field surveys to assess potential impacts to sensitive biological resources beyond those identified in the previously prepared Darden Clean Energy Project BRA Volumes 1-3 included in the Opt-in Application (IP Darden I, LLC and Affiliates [IP Darden I] and Rincon 2023) and subsequent responses to California Energy Commission (CEC) and California Department of Fish and Wildlife (CDFW) comments on biological resources included in Data Response Set No. 4 (IP Darden I and Rincon 2024). The evaluations of potential impacts herein are based upon current available information regarding proposed activities within the three alternative fiber line scenario study areas and the PG&E substation study areas.

The three alternative fiber line scenario study areas (also referred to as “alternative fiber line study areas”) encompass the downstream network upgrades of three fiber line scenarios (57.3 miles total for all three scenarios, no more than 28 miles of which would be implemented if the longest fiber line scenario is chosen) and a 100-foot buffer, located in Fresno County, California. The study areas of four PG&E substations (also referred to as “substation study areas”) include the PG&E substations plus a 100-foot buffer. Two of the substation study areas are located in Fresno County, California, one is located in in Merced County, California, and one is located in Kern County, California.

The three alternative fiber line study areas predominantly consist of active and non-active agricultural fields interspersed with saltbush scrub, annual grasslands, developed areas, and bare ground. Highways and limited developed uses (e.g., rural residences and public roads) also occur in the three alternative fiber line study areas. The four PG&E substation study areas are predominantly developed with existing PG&E facilities, with some agricultural land cover present in the proposed work area and study area at Cantua Substation.

A total of 148 special status species were evaluated for potential to occur in the three alternative fiber line study areas and the substation study areas; two special status plant species have moderate potential to occur, and 24 special status wildlife have moderate or high potential to occur in one or more of the three alternative fiber line study areas or substation study areas. One sensitive natural community occurs in the Cantua Substation study area but would be avoided by proposed Project activities. Several aquatic features, including ephemeral drainages, roadside ditches, and manmade canals and agricultural ditches intersect the alternative fiber line study areas and two of the substation study areas, but would be avoided by proposed Project activities. Wildlife movement corridors are present in the vicinity of the study areas, in the Blue Hills (south of Cantua Creek) and the Ciervo Hills (north of Cantua Creek), as well as in ephemeral drainages. The Fresno County General Plan, Merced County General Plan, and Kern County General Plan contain policies protecting biological resources present within the study areas.

The proposed construction activities are not subject to any conservation plans. However, operations and maintenance (O&M) activities conducted for the facilities and equipment installed as part of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would be conducted as part of the overall O&M Program for the PG&E Transmission and Distribution System in the San Joaquin Valley. As such, they would comply with the requirements of the *PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan* (O&M HCP; Jones & Stokes Associates, Inc. 2006) and its Implementing Agreement, Federal Permit, and State Permit.

With implementation of PG&E Construction Measures, no potentially significant impacts to special status species, sensitive natural communities, critical habitat, jurisdictional waters and wetlands, wildlife movement, locally protected resources, or conflicts with adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCPs would occur as a result of the PG&E Project.

1 Project Description

Rincon Consultants, Inc. (Rincon) prepared this Biological Resources Assessment (BRA) as an addendum to the Darden Clean Energy Project BRA to document the existing biological conditions for the proposed Pacific Gas & Electric Company Downstream Network Upgrades (PG&E Project). The PG&E Project consists of the development of downstream network upgrades necessary to accommodate the Darden Clean Energy Project located in Fresno County, California. This BRA addendum is prepared with the intent of serving as the basis for suitable analysis of the potential impacts to biological resources pursuant to the California Environmental Quality Act (CEQA) environmental review process.

1.1 Project Overview

The PG&E Project consists of the development of downstream network upgrades including three alternative scenarios for fiber line communications (Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line) as well as proposed upgrades at existing PG&E substations.

The three alternative fiber line scenarios include three long, linear, optical ground wire (OPGW) routes along existing PG&E transmission line corridors, which generally run parallel to the Interstate 5 Freeway (I-5) (Scenario 1: 15 miles, Scenario 2: 28 miles, or Scenario 3: 25 miles), to facilitate connection between the Darden Clean Energy Project utility switchyard (hereinafter "utility switchyard") and existing PG&E facilities and infrastructure. Only one of these options would ultimately be constructed.

Proposed equipment upgrade activities at existing PG&E substations would occur at the Los Banos Substation, Midway Substation, and Gates Substation, and new equipment may be installed at Cantua Substation. Potential activities at Manning Substation were not assessed in this BRA addendum; activities that may occur at these locations are being evaluated and permitted under a separate California Public Utilities Commission (CPUC) formal process with a different project proponent.

The PG&E Project downstream network upgrade components are depicted in figures in Appendix A. This addendum to the BRA assesses existing conditions and impacts associated with the PG&E downstream upgrades allocated to the Darden Project. The Darden Clean Energy Project components are assessed separately in the BRA submitted as Appendix Q with the original application materials in the Opt-In Application (IP Darden I and Rincon 2023) and subsequent data responses to CEC comments. Components and activities of the three alternative fiber line scenarios and four existing PG&E substations are described in detail below.

1.1.1 Telecommunication Facilities

To meet PG&E's communications reliability standards microwave and fiber line communications paths will be established to support redundant communication paths for the utility switchyard.

Fiber Communication Line

PG&E proposes to install a combination of fiber lines on existing electric transmission 230-kV structures using OPGW and on existing electric distribution structures using All-Dielectric Self-

Supporting (ADSS). The fiber line would be installed under one of the following scenarios summarized in Table 1 and illustrated in Appendix A, Figure 1a.

Table 1 Components of Three Alternative Fiber Line Scenarios

Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line
Scenario 1 Fiber Line – 15 miles ▪ Mixture of OPGW and ADSS ▪ Communication between utility switchyard and existing telecommunications infrastructure along Panoche-Tranquility 230kV line ▪ Scenario 1 Fiber Line would be co-located within an existing PG&E electric distribution and 230 kV transmission line corridor in Fresno County ▪ A section of Scenario 1 Fiber Line would cross I-5, installation of which would require replacing existing structures, installing new structures, or a directional bore to underground the line. ▪ Ground disturbance expected: (a) within Darden Clean Energy Project boundary from where Scenario 1 Fiber Line originates at the utility switchyard to the dead-end electric distribution structure immediately adjacent to Darden Clean Energy Project, (b) potentially along the portion of the route where Scenario 2 crosses I-5, (c) where the line transitions from the distribution structures to the transmission line structures, and (d) where Scenario 1 Fiber Line transitions between the transmission structures to the splice point.	**Scenario 2 Fiber Line – 28 miles** ▪ Mixture of OPGW and ADSS ▪ Communication between utility switchyard and existing PG&E Gates Substation ▪ Scenario 2 Fiber Line would be co-located within an existing PG&E electric distribution and 230 kV transmission line corridor ▪ A section of Scenario 2 Fiber Line would cross I-5, installation of which would require replacing existing structures, installing new structures, or a directional bore to underground the line. ▪ Ground disturbance expected: (a) within Darden Clean Energy Project boundary from where Scenario 2 Fiber Line originates at the utility switchyard to the dead-end electric distribution structure immediately adjacent to Darden Clean Energy Project, (b) potentially along the portion of the route where Scenario 2 crosses I-5, (c) where Scenario 2 Fiber Line transitions between existing distribution structures to transmission structures, and (d) from the Scenario 2 Fiber Line dead-end electric transmission line or electric distribution line structure to the existing PG&E Gates Substation	**Scenario 3 Fiber Line – 25 miles** ▪ Communication between utility switchyard and existing PG&E Gates Substation ▪ Scenario 3 Fiber Line would be located underground, overhead on a dedicated pole line, or a mixture of both located within an PG&E's existing 500 kV transmission line corridor, transitioning to OPGW within PG&E's existing 230 kV transmission line corridor ▪ Ground disturbance expected: (a) along the 500 kV line to place Scenario 3 Fiber Line underground or on a new dedicated pole line (or mixture of both), but not along the 230kV line where Scenario 3 Fiber Line would be attached to existing structures, (b) where Scenario 3 Fiber Line transitions between the transmission structures, and (c) from the Scenario 3 Fiber Line dead-end electric transmission line or electric distribution line structure to the existing PG&E Gates Substation

The communication line is anticipated to transition from overhead to underground at the locations described below. It is possible that undergrounding at other locations may also be required depending on ground conditions. The underground termination segments would be routed for up to approximately 2,000-feet.

- Approximately 1,000 feet within the Darden Clean Energy Project boundary from where the Scenario 1 Fiber Line or Scenario 2 Fiber Line originates at the utility switchyard to the dead-end electric distribution structure immediately adjacent to the Darden Clean Energy Project (Figure 4d).
- Where the Scenario 1 Fiber Line or Scenario 2 Fiber Line transitions between existing distribution structures to transmission structures (Figure 4d).

- Where Scenario 1 Fiber Line transitions between existing transmission structures to the splice point (Figure 4a).
- From the Scenario 2 Fiber Line or Scenario 3 Fiber Line dead-end electric transmission line or electric distribution line structure to the existing PG&E Gates Substation (Figure 4k).

In addition, as noted above, a directional bore may be used to underground the Scenario 1 Fiber Line or Scenario 2 Fiber Line where it crosses I-5.

Microwave Path Options

The following digital microwave pathway options will utilize the utility switchyard's new approximately 120- foot to 200-foot microwave antenna tower. One of these options will be used and selection of the path will be determined upon completing infield site survey to verify line of sight from the utility switchyard's new microwave antenna.

- Microwave path to an existing microwave tower located at the Giffen Substation.
- Microwave path to an existing microwave tower located at the Excelsior Switching Station.
- Microwave path to an existing microwave tower located at Joaquin Ridge.
- Microwave path to Cantua Substation, which will require installation of one new microwave tower.

No construction activities would occur for paths to existing towers and those locations are not described further in this document. The option to Cantua Substation is described below in Section 1.1.2 *Substations*.

1.1.2 Substations

The four existing PG&E Substations where proposed activities would occur are described below and depicted in Appendix A, Figure 1b.

Los Banos Substation

The following work will occur within the fence line and existing footprint of the substation:

- Install a megawatt (MW) terminal and Direct Transfer Trip (DTT) scheme between the utility switchyard and Los Banos Substation using existing IT T1 infrastructure for the communication circuits.
- Replace Los Banos 500 kV circuit breakers 822, 832 & 842.

Midway Substation

The following work will occur within the fence line and existing footprint of the substation:

- Install a DTT scheme between the utility switchyard and Midway Substation using existing IT T1 infrastructure for the communication circuits, remove existing shunt reactor and install a new smaller shunt reactor to maintain the level of compensation, and replace or modify line relays installed with the new control building to maintain compatibility with line relays at the utility switchyard.
- Replace Midway 500 kV circuit breakers 742, 822, 912, 942.

- Install 2 x 16 ohm series bus reactors between Midway Substation 230 kV bus sections D and E (16 ohm parallel/8 ohm net).

Gates Substation (or Manning Substation)

A new series capacitor bank would need to be installed at Manning Substation, if that facility is built and comes online before Darden, the work for which is included in the Manning Substation scope being permitted under a separate CPUC formal process with proponent, LS Power. If Darden comes online first, the series capacitor would then need to be installed at the Gates Substation instead. All work would occur within the fence line and existing footprint of the Gates Substation. The Manning Substation component and activities are not analyzed further in this Addendum as they are being analyzed in a separate CPUC process.

Cantua Substation

As described above, to meet PG&E's communication reliability standards, microwave and fiber line communication paths will be established to support redundant communication paths to the utility switchyard. One option, a microwave path option to Cantua substation, would utilize the utility switchyard's new approximately 120-foot to 200-foot microwave antenna tower and would require installation of one new microwave tower at Cantua Substation.

1.2 Construction and Installation

1.2.1 Fiber Communication Line

Information is provided in this section to describe the installation construction process for the OPGW fiber lines. If it is determined that upgrades or replacement of existing structures and equipment is needed to accommodate the fiber cables, those activities would occur concurrently with the fiber installation.

The OPGW line installation would be completed in approximately 12 to 16 weeks; at any one location the construction would take between 2 and 3 weeks. Existing roads and access along the existing PG&E transmission line would be used to install the OPGW line, and PG&E would use the same methods when maintaining the electrical system. The OPGW line comes on reels that hold approximately 23,000 linear feet of cable. It is estimated that up to 20 temporary pull/reel and splice sites would be established along the existing electric transmission line corridor. Each splice and pull/reel site would require an approximate 150-foot by 250-foot work area between the structure sites within the existing PG&E transmission corridor right-of-way. The locations of the pull/reel sites will be finalized during detailed design. The criteria used in selecting the final pull/reel sites will be as follows:

- Accessibility for vehicles
- Presence of flat or nearly flat land next to existing transmission line route for equipment set-up
- Existing land use
- Absence of or minimal habitat for sensitive species
- Absence of resources that would restrict work

Preparation of the temporary pull/splice sites would require minor ground disturbance in the form of drive and crush, but not grading. Minor structural modifications would also be made to each of

the transmission structures to allow splice boxes to be mounted where the sections of OPGW would be spliced (every three to five miles). The pull/reel sites and transmission structures would be accessed generally along existing unimproved roads or improved unsurfaced or surfaced roads that lead to many of the structures; no new roads would be constructed or improved. Helicopters may be used to place materials at the point of installation for structures inaccessible by existing roads or as otherwise needed.

At each of the existing structures along the 230 kV electric transmission line route, minor upgrades to the steel attachments may be required to accommodate installation of the OPGW. These upgrades would include only overhead work on the existing tower, such as replacing the gode peaks with a pulley to accommodate the OPGW line. The existing static wire would then be used to pull the new OPGW through each structure's pulley. Existing roads or helicopters would be used to provide access to the sites to fashion the attachments needed on each structure.

Construction would be completed using a combination of helicopter and ground crews. Helicopters would be used to transport electrical workers to the towers, to deliver materials, and to assist in pulling the OPGW from structure to structure. Approximately ten 200-foot by 200-foot helicopter landing zones [HLZs] would be situated approximately every three to five miles using minimal surface disturbance, similar to the pull sites. Establishing these HLZs would involve minimal temporary ground disturbance, which could involve vegetation crushing and blowing (from helicopter landing and takeoff) but not removal. The HLZ locations would be selected to minimize potential impacts to sensitive biological resources, including avoiding locations within the grassland and atriplex scrub vegetation communities for Scenarios 1 and 2, as feasible. HLZ siting would avoid locations within or adjacent to jurisdictional resources. The zones would facilitate the use of helicopters to reduce overall impacts associated with the work. Landing zones would primarily be used for staging materials, picking up and transporting electrical personnel and equipment, and refueling helicopters.

Overhead crossings of public roadways or existing transmission or distribution lines would require the use of temporary guard structures at each crossing. The structures would be designed to prevent tools or materials from falling into the roadway or utility. Guard structures typically consist of two to four wooden structures and cross beams attached between the structures. They are generally installed in pairs with a net strung between them, but in some cases a net would not be required. A PG&E line truck would be used to auger and set the wooden structures. For roadway crossings, the temporary structures would be placed in or next to the disturbed road shoulder in an approximately 75-foot by 75-foot area. No grading or vegetation removal is anticipated during installation of the guard structures. Guard structures would be removed following OPGW line installation, and the holes would be backfilled.

If replacement of existing structures and equipment is needed to accommodate the fiber line on existing pole lines, ground disturbance activities associated with such replacement will not occur within potentially jurisdictional aquatic resources. If Scenario 3 Fiber Line is selected, the undergrounding of the fiber line or installation of a dedicated pole line will occur outside of potentially jurisdictional aquatic resources. For undergrounding activities, trenchless technology (i.e., horizontal directional drilling or jack and bore) would be used to install the fiber line under potentially jurisdictional aquatic resources; entry and exit pits would also be located outside the extents of potentially jurisdictional aquatic resources. The OPGW line installation would be completed in approximately 12 to 16 weeks; at any one location, the construction would take between 2 to 3 weeks. PG&E's construction start is dependent on receiving approval from the CPUC.

1.2.2 Substations

Work at the Los Banos, Midway, and Gates substations will occur within the substation fence lines.

If the Cantua Substation microwave path option is selected, a new microwave tower would be installed. If final design of the tower indicates it cannot be mounted within the existing fence line due to site constraints of existing equipment, the substation footprint may be slightly expanded to the north or west to accommodate space for the new tower. This analysis assumes the Cantua Substation project footprint will be expanded 50 feet to the north of the existing northern fence line and 50 feet to the west of the existing western fence line.

1.2.3 PG&E Construction Measures

PG&E facilities fall under the jurisdiction of the CPUC, and PG&E will separately comply with CPUC permitting requirements for its interconnection facilities. Because PG&E is not an applicant in this CEC proceeding, PG&E is not subject to mitigation measures or other requirements to which the PG&E team has not formally agreed and that are not included as separate PG&E construction measures. A list of standard PG&E Construction Measures is included as Appendix F. These measures would be applied by PG&E and its contractors during construction activities associated with implementation of the alternative fiber line scenarios and proposed activities at the substations described in this document and do not apply to other Darden Clean Energy Project components. The standard PG&E Construction Measures are incorporated into the three alternative fiber line scenarios and proposed activities at the four substations for purposes of CEQA review and are considered when analyzing potential impacts from implementation of the alternative fiber line scenarios and proposed activities at the four substations. PG&E's permitting through the CPUC will rely on the CEC's CEQA review and, as such, the standard PG&E Construction Measures will be mandatory.

1.3 Operations and Maintenance

1.3.1 Activities

Once constructed, operations and maintenance (O&M) activities associated with implementation of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would be conducted as part of the overall O&M Program for the PG&E Transmission and Distribution System, which includes minor construction activities. In all cases, O&M work is performed according to current federal, state, and local regulatory requirements and, where applicable, landowner agreements. O&M activities include: aerial and ground patrols; electrical system facilities and equipment (including poles and substations) inspections, maintenance, replacement, and repair; and vegetation management and access road maintenance. Minor construction activities include: wood pole line construction/relocation (no longer than one mile); electrical tower line construction (no longer than one mile); minor substation expansion; and electric underground line construction (almost exclusively conducted in urban settings).

1.3.2 PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan

The O&M activities described above that would be conducted for the facilities and equipment installed as part of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would be subject to the *PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan* (O&M HCP; Jones & Stokes Associates, Inc. 2006). The PG&E San Joaquin Valley O&M HCP is a multi-species HCP for routine O&M activities in the San Joaquin Valley that supports applications for incidental take authorizations under the California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA). PG&E O&M activities in the San Joaquin Valley would also be subject to the HCP's Implementing Agreement, Federal Permit, and State Permit that stipulate the conditions under which take of HCP Covered Species is authorized. The Plan Area, Covered Species, and Covered Activities are described in the HCP:

> "PG&E's San Joaquin Valley O&M HCP plan area is defined to include PG&E's gas and electrical transmission and distribution facilities, the lands owned by PG&E and/or subject to PG&E easements for these facilities, private access routes to infrastructure associated with O&M activities, minor facility expansion areas, and mitigation areas for impacts resulting from covered activities. The plan area includes portions of nine counties including San Joaquin, Stanislaus, Merced, Fresno, Kings, Kern, Mariposa, Madera, and Tulare, and is approximately 276,350 acres.
>
> This HCP covers 23 wildlife and 42 plant species for 33 routine O&M activities for PG&E's electric and gas transmission and distribution systems within nine counties of the San Joaquin Valley. Activities that are covered under the HCP include activities associated with the O&M (including limited minor new construction) of PG&E's gas and electric transmission and distribution system as mandated for public safety. Typical activities include: gas pipeline protection, recoating, repair and replacement; electric line protection, repair, reconductoring, and replacement; electric pole repair/replacement; vegetation management to maintain clearances around facilities; and minor new gas and electric extensions."

1.4 Project Location

The PG&E Project is located predominantly in unincorporated Fresno County on the western side of the San Joaquin Valley, with two discrete locations at existing PG&E substations in Merced County (Los Banos Substation) and Kern County (Midway Substation) (Appendix A, Figure 1a and Figure 1b).

1.4.1 Fiber Communication Line

The three alternative fiber line scenarios generally run parallel to I-5 in western Fresno County, as described below (Appendix A, Figure 1a).

- **Scenario 1 Fiber Line** runs for approximately 2 miles along the northern perimeter of the utility switchyard parcel, then north along S Derrik Avenue and across I-5 to a connection point with an existing PG&E electric distribution and 230 kV transmission line corridor; the connection point is approximately 0.4 mile east of I-5 near the corner of S Derrick Avenue and W Harlan Avenue. From there, it runs northwest on existing transmission towers paralleling I-5 for approximately 13 miles to a connection point with the Panoche-Tranquility 230kV line located in an agricultural field approximately 0.3 mile northeast of the S Jerrold Avenue and W Dinuba Avenue intersection.

- **Scenario 2 Fiber Line** runs for approximately 2 miles along the northern perimeter of the utility switchyard parcel, then north along S Derrik Avenue and across I-5 to a connection point with an existing PG&E electric distribution and 230 kV transmission line corridor; the connection point is approximately 0.4 mile east of I-5 near the corner of S Derrick Avenue and W Harlan Avenue (the same as Scenario 1 Fiber Line). From there, it runs southeast on existing transmission towers paralleling I-5 for approximately 26 miles to the Gates Substation located on the northwest corner of the W Jayne Avenue and S Trinity Avenue intersection.
- **Scenario 3 Fiber Line** runs from the southern perimeter of the utility switchyard parcel within an existing PG&E 500 kV transmission line corridor for approximately 17 miles southeast to a connection point with an existing PG&E 230 kV transmission line corridor; the connection point is in an agricultural field approximately 0.3 mile northeast of the S El Dorado Avenue and W Mitchell Avenue intersection. It then continues southeast on existing transmission towers within the 230 kV transmission line corridor paralleling I-5 for approximately 8 miles to the Gates Substation located on the northwest corner of the W Jayne Avenue and S Trinity Avenue intersection.

The existing transmission lines in the vicinity of the Darden Clean Energy Project, with which the three alternative fiber line scenarios would share transmission line corridors, are spaced approximately 1,200 to 1,600 feet apart and have towers that range between approximately 100-feet tall to 160-feet tall.

1.4.2 Substations

Cantua Substation is located in Fresno County approximately 3 miles east of the utility switchyard adjacent to Cantua Creek. It is otherwise surrounded by agricultural fields.

Gates Substation is located in Fresno County at the southeastern terminus of the Scenario 2 Fiber Line and Scenario 3 Fiber Line on the northwest corner of the W Jayne Avenue and S Trinity Avenue intersection. It is predominantly surrounded by agricultural fields.

Los Banos Substation is located in Merced County directly south of Santa Nella and east of San Luis Reservoir along the south side of California State Route 152, approximately 55 miles northwest of the utility switchyard. It is predominantly surrounded by undeveloped land; a gas station travel center, hotel, RV park, and small residential area are located to the east.

- **Midway Substation** is located in Buttonwillow, Kern County, on the north side of California State Route 58. Residential and recreational areas of Buttonwillow bound the substation on the west, with agricultural fields to the north and east. California State Route 58 is to the south, on the other side of which are agricultural fields and a disturbed area with farmer's co-op facilities.

1.5 Regulatory Summary

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

1.5.1 Assembly Bill 205

The CEC has been authorized under AB 205 (Chapter 61, 2022) to establish a new certification program for eligible non-fossil-fueled power plants and related facilities to optionally seek certification from the CEC, using emergency rulemaking authority provided by AB 205. Per the Notice of Approval of Emergency Regulatory Action for Opt-in Regulations Section 1877, Opt-In applications are required to include all the information specified by California Code of Regulations (CCR) Title 20 Division 2 Section 1704(a) Appendix B that is relevant to the Project.

1.5.2 Definition of Sensitive Biological Resources

For the purposes of this report, sensitive biological resources, including sensitive or special-status species, are those that meet the criteria defined by CEC in Appendix B, requirement 13(A) inclusive of:

- Areas of Critical Environmental Concern as defined by 20 CCR Section 1201I (formerly 1201(d)), including but not limited to, wildlife refuges, wetlands, thermal springs, endangered species habitats, and areas recognized by the California Natural Area Coordinating Council and the Governor's Office of Planning and Research
- Species of Special Concern, as defined by 20 CCR Section 1201(t) (formerly 1201(u)), including but not limited to species designated pursuant to state and federal law and those rare and endangered plant species recognized by the Smithsonian Institution or the California Native Plant Society
- Species and habitats identified by local, state, and federal agencies as needing protection, including but not limited to those identified by the California Natural Diversity Database (CNDDB), or where applicable, in Local Coastal Programs or in relevant decisions of the California Coastal Commission
- Species listed under state or federal Endangered Species Acts
- Species identified as state Fully Protected
- Species covered by Migratory Bird Treaty Act (MBTA)
- Species receiving consideration during environmental review under CEQA Guidelines 14 CCR Section 15380
- Locally significant species that are rare or uncommon in a local context such as county or region or is so designated in local or regional plans, policies, or ordinances
- Plant species listed as rare under the California Native Plant Protection Act
- Established native resident or migratory wildlife corridors or wildlife nursery sites

1.5.3 Environmental Statutes

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix B):

- CEQA
- FESA
- CESA
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)

- MBTA
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- County of Fresno General Plan (2000)
- County of Merced General Plan (2012)
- County of Kern General Plan (2009)
- PG&E San Joaquin Valley O&M HCP (Jones & Stokes Associates, Inc. 2006)

1.5.4 Guidelines for Determining CEQA Significance

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

a. 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 CDFW or the U.S. Fish and Wildlife Service (USFWS).
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas, etc.) through direct removal, filling, hydrological interruption, or other means.
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional or state habitat conservation plan.

2 Methodology

2.1 Study Areas

The three alternative fiber line scenario study areas (also referred to as "alternative fiber line study areas") encompass the downstream network upgrades of the three fiber line scenarios (57.3 miles total for all three scenarios, no more than 28 miles of which would be implemented if the longest fiber line scenario—Scenario 2 Fiber Line—is chosen) and a 100-foot buffer. The study areas of four PG&E substations (also referred to as "substation study areas") include the PG&E substations plus a 100-foot buffer. All study areas (alternative fiber line study areas and substation study areas) are also referred to collectively as "PG&E Downstream Upgrades Study Areas". The 100-foot survey buffer was selected to adequately capture the three alternative fiber line scenarios and four PG&E substations and vicinities for impact analysis due to the homogeneity of the land cover types surrounding these components (Appendix A, Figure 1a and Figure 1b).

2.2 Literature Review

Rincon conducted a literature review to characterize the nature and extent of biological resources with potential to occur within and adjacent to the three alternative fiber line study areas and the substation study areas. The literature review included an evaluation of current and historical aerial photographs of the study areas (Google Earth 2024), regional and site-specific topographic maps, climatic data, and the databases discussed below.

Queries of the USFWS Information for Planning and Consultation system (IPaC; USFWS 2024a) and California Native Plant Society (CNPS) online Inventory of Rare and Endangered Plants of California (2024) were conducted to obtain comprehensive information regarding state and federally listed species, and other special status species, considered to have potential to occur in the vicinity of the three alternative fiber line study areas and the substation study areas. A review of the CNPS and CDFW CNDDB was performed inclusive of the following USGS 7.5-minute topographical quadrangles (CDFW 2024a):

- **Los Banos Substation study area:** *San Luis Dam, Pacheco Pass, Crevison Peak, Howard Ranch, Ingomar, Volta, Ortigalita Peak NW, Los Banos Valley, Mariposa Peak*
- **Midway Substation study area:** *Buttonwillow, Lokern, Semitropic, Wasco SW, Wasco, Rio Bravo, Tupman, East Elk Hills, West Elk Hills*
- **Scenario 1, Scenario 2, Scenario 3, Cantua Substation and Gates Substation study areas:** *Chounet Ranch, Chaney Ranch, Coit Ranch, Tumey Hills, Monocline Ridge, Levis, Cantua Creek, Ciervo Mtn, Lillis Ranch, Tres Picos Farms, Westside, Joaquin Rocks, Domengine Ranch, Harris Ranch, Coalinga, Guijarral Hills, Huron, Avenal, La Cima, Calflax, Kreyenhagen Hills, Westhaven, Vanguard, Kettleman City, San Joaquin, Idria, Tranquillity, Alcalde Hills, Santa Rita Peak, Five Points*

Occurrence records for special status bird species were also reviewed in eBird (2024), an online database of bird distribution and abundance. The final list of special status biological resources (species and sensitive natural communities) was evaluated based on documented occurrences and Rincon biologists' expert opinions on species known to occur in the region. Rincon conducted an

analysis of the species' potential to occur based on species' known distributions and habitat requirements in the context of the existing conditions of the alternative fiber line study areas and substation study areas. The analysis was conducted for each species and each sensitive community under consideration, and the results were tabulated according to alternative fiber line study area and substation study area (Appendix C), and are discussed in detail below. Species observed during field surveys were also included in the potential to occur analysis and were evaluated for their specific use (e.g., nesting or foraging) of areas within the alternative fiber line study areas and substation study areas.

The following is the full list of resources reviewed for information on existing conditions relating to biological resources within the alternative fiber line study areas and the substation study areas:

- Google Earth (2024)
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (2024a)
- CDFW CNDDB (CDFW 2024a)
- CDFW California Essential Habitat Connectivity Project (CDFW 2024b)
- CDFW Special Animals List (CDFW 2024d)
- CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2024e)
- CDFW California Natural Community List (CDFW 2023a)
- CDFW California Natural Community Conservation Plans Map (CDFW 2023b)
- USFWS IPaC (USFWS 2024a)
- USFWS Critical Habitat Mapper (USFWS 2024b)
- USFWS National Wetlands Inventory (NWI) (USFWS 2024c)
- USGS National Hydrography Dataset (NHD) (USGS 2024)
- CNPS Online Inventory of Rare and Endangered Plants of California (CNPS 2024)
- eBird: An online database of bird distribution and abundance (eBird 2024)

The vegetation community characterizations for this analysis were based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009).

The potential for wildlife movement corridors was evaluated based on the California Essential Habitat Connectivity Project commissioned by the California Department of Transportation and CDFW (Spencer et al. 2010), and by evaluating the presence of other site-specific natural corridors typically used by wildlife, such as creeks or topographic features (gullies, berms, etc.).

2.3 Field Reconnaissance Surveys

Two Rincon biologists conducted field reconnaissance surveys of the three alternative fiber line study areas and the four substation study areas on three consecutive days: June 24, 25, and 26, 2024, as depicted in Appendix A, Figure 1a and Figure 1b. Reconnaissance surveys focused on documenting existing conditions and biological resources, field-verifying land cover types and any native vegetation communities, and evaluating the alternative fiber line study areas and substation study areas for the potential to support special status plant and wildlife species, sensitive plant communities, wildlife corridors and nursery sites, locally protected resources, and potential jurisdictional waters. Results of the surveys were used to identify suitable habitat that may require

focused protocol surveys or other more involved analyses, and to document or verify existing biological resources in the three alternative fiber line study areas and substation study areas to inform the analysis of potential impacts to biological resources.

The reconnaissance surveys consisted of a combination of vehicular windshield surveys and pedestrian surveys. Windshield surveys were conducted primarily along agricultural corridors, and pedestrian surveys were performed those areas that had non-agricultural vegetation, potential jurisdictional resources, and/or potentially suitable habitat for special status species, where accessible. While the surveys did not cover the entirety of the alternative fiber line study areas and substation study areas due to access constraints, the biologists surveyed representative locations covering a significant proportion of the study areas such that findings would be representative of the full study areas. Biologists conducted all surveys with the aid of binoculars to support in the observation and identification of biological resources. Particular attention was given to areas with lower levels of disturbance and a higher likelihood of supporting special status species such as burrowing owl (*Athene cunicularia*), blunt-nosed leopard lizard (*Gambelia sila*), Swainson's hawk (*Buteo swainsoni*), and San Joaquin kit fox (*Vulpes macrotis mutica*). Wildlife was also detected via the observation of calls, tracks, scat, nests, or other signs of presence. Biologists documented and mapped points where any sign or presence of special status species were observed within the alternative fiber line study areas and the substation study areas. Aquatic resources within the alternative fiber line study areas and substation study areas were reviewed and the outer limits of potential jurisdiction were mapped in the field where accessible. A formal jurisdictional delineation was not conducted.

Representative photographs document vegetation communities and land cover types, species sign, or other notable biological resource observations; photographs are included in Appendix D and photo points are depicted in Appendix A, Figure 3. Compendia of plants and wildlife species observed during surveys are included in Appendix E. Survey dates, staff, and weather conditions are presented in Table 2, below.

Table 2 Reconnaissance Survey Summaries

Date	Biologists	Time and Weather Conditions	
6/24/2024	Stella Morris, Jaran Hopkins	Time:	10:00-15:45
		Temperature:	89-103 °F
		Skies:	Partly Cloudy
		Wind:	2-8 mph
6/25/2024	Stella Morris, Christian Knowlton	Time:	06:45-17:15
		Temperature:	71-104 °F
		Skies:	Partly Cloudy
		Wind:	2-6 mph
6/26/2024	Stella Morris, Christian Knowlton	Time:	07:15-12:15
		Temperature:	78-95 °F
		Skies:	Clear
		Wind:	2-4 mph

3 Existing Conditions

3.1 Physical Characteristics

The three alternative fiber line study areas are located predominantly in unincorporated Fresno County within the San Joaquin Valley, adjacent to and paralleling I-5. Four existing PG&E substation study areas are located throughout the San Joaquin Valley from Buttonwillow in Kern County (Midway Substation) in the southern extent to near Los Banos in Merced County (Los Banos Substation) to the north, with the remaining two substations adjacent to the Scenarios 1, 2, and 3 Fiber Lines (Gates Substation and Cantua Substation) (Appendix A, Figure 1a, Figure 1b, and Figure 2). The San Joaquin Valley is bounded by the Sacramento – San Joaquin River Delta to the north, the Ciervo Hills, Big Blue Hills and Diablo Mountain Range to the west, the Sierra Nevada Mountains to the east, and the Tehachapi Range to the south. The region is primarily composed of agricultural land dating back to as early as the 1940s, and cattle grazing land, with areas of residential and industrial development primarily concentrated near Fresno. Vegetation occurring in the San Joaquin Valley mostly consists of annual/ruderal grassland, pasture, cropland, valley-foothill riparian, vernal pool, alkali scrub, and orchard-vineyard (Fresno County 2000). Topography within the alternative fiber line study areas and substation study areas is relatively flat, with elevations ranging from approximately 280 to 780 feet above mean sea level (amsl); elevation generally increases from east to the west towards the Diablo Range (Table 3). Land use in the vicinity of the alternative fiber line study areas and substation study areas includes agriculture, open space with scattered shrubs, grassland, drainage features, highways, and limited developed uses (i.e., rural residences, public roads, solar farms).

Table 3 Elevations of PG&E Downstream Upgrades Study Areas

Fiber Lines (feet amsl)			Substations (feet amsl)			
Scenario 1	Scenario 2	Scenario 3	Los Banos	Cantua	Gates	Midway
430 – 610	370 – 580	390 – 780	310	405	395	280

3.2 Watersheds and Drainages

The three alternative fiber line study areas and the Cantua, Gates, and Midway Substations study areas are located in the Upper Dry Watershed (Hydrologic Unit Code [HUC]-8 18030009) and the Tulare-Buena Vista Lakes Watershed (HUC-8 18030012); the Los Banos Substation is located in the Middle San Joaquin-Lower Chowchilla Watershed (HUC-8 18040001) (USGS 1978). Ephemeral drainages and manmade canals, ditches, and ponds intersect the three alternative fiber line study areas in multiple locations, as well as the Cantua Substation study area. Features observed during the surveys (where accessible) and those mapped in the NWI and NHD are depicted in Appendix A, Figure 4. Seven NWI-mapped intermittent riverine features intersecting the three alternative fiber line study areas and the Cantua Substation study area were assessed in the field by biologists, including Los Gatos Creek, Domengine Creek, Martinez Creek, Salt Creek, Cantua Creek, and two unnamed drainages. A drainage ditch with ponded water was present on the south-southeast corner of the property containing the Gates Substation, but is located outside the Gates Substation study area. Coalinga Canal intersects the Scenario 2 study area as an underground pipeline and the

Scenario 3 study area as a concrete-lined surface water canal. Additional features mapped in the NWI and NHD as intersecting the three alternative fiber line study areas were not assessed in the field due to access restrictions; the NWI and NHD data representing these features are depicted in Appendix A, Figure 4. Table 4 provides a summary of drainages where they intersect the three alternative fiber line study areas and the Cantua Substation study area.

Table 4 Summary of Aquatic Feature Intersecting PG&E Downstream Upgrades Study Areas

	Study Areas Intersected by Aquatic Features (Lat/Long)			
Feature Name*	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Substations**
Unnamed Drainage #2	36.498355, -120.445294	–	–	–
Cantua Creek	–	36.421408, -120.372407	36.412173, -120400325	Cantua Substation: 36.428690, -120.34144
Salt Creek	–	36.399475, -120.352398	36.394833, -120.383346	–
Martinez Creek	–	–	36.369615, -120.356113	–
Domengine Creek	–	36.349425, -120.306326	36.334131, -120.317341	–
Unnamed Drainage #1	–	36.325173, -120.272928	36.308944, -120.290004	–
Los Gatos Creek	–	36.184007, -120.159615	36.184007, -120.159615	–
Additional NWI- and NHD-Mapped Features	Multiple Locations	Multiple Locations	Multiple Locations	–

*Arranged in order of location from north to south.

3.3 Soils

According to the USDA NRCS Web Soil Survey (USDA NRCS 2024a), 27 soil map units occur across the alternative fiber line study areas and substation study areas (Appendix A, Figure 5). Descriptions of each soil series that comprise the soil map units are included below. Some soil map units within the alternative fiber line study areas and substation study areas have only a single soil series, while others have a complex of two to three soil series. Three soil map units are considered hydric (USDA NRCS 2024b); two of which occur at the existing Midway Substation (Buttonwillow clay, drained, and Lokern clay, saline-alkali drained), and the third occurs along the Scenario 1, Scenario 2, and Scenario 3 study areas with agricultural land cover (Excelsior sandy loam, 0 to 2 percent slopes, Major Land Resource Area [MLRA] 17). Table 5 includes a summary of soil map units in the three alternative fiber line study areas and substation study areas and identifies those considered hydric. Soil series descriptions are provided below.

Table 5 Summary of Soil Map Units in PG&E Downstream Upgrades Study Areas

Soil Map Unit	Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Existing Substations
Ballvar loam, 2 to 8 percent slopes	–	–	–	Los Banos
Damluis clay loam, 2 to 8 percent	–	–	–	Los Banos
Buttonwillow clay, drained*	–	–	–	Midway
Lokern clay, saline-alkali drained*	–	–	–	Midway
405 – Polvadero-Guijarral complex, 5 to 15 percent slopes	–	–	X	–
425 – Kimberlina sandy loam, 0 to 2 percent slopes	X	X	X	–
426 – Kimberlina sandy loam, 2 to 5 percent slopes	X	–	X	–
436 – Panoche loam, 0 to 2 percent slopes	X	X	X	–
437 – Panoche sandy loam, 0 to 2 percent slopes	X	X	X	Cantua
442 – Panoche clay loam, 0 to 2 percent slopes	X	X	–	–
445 – Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17*	X	X	X	–
447 – Excelsior sandy loam, sandy substratum, 0 to 2 percent slopes	–	X	X	–
451 – Milham sandy loam, 0 to 2 percent slopes MLRA 17	–	X	X	Midway
452 – Milham sandy loam, 2 to 5 percent slopes	X	–	X	–
454 – Polvadero sandy loam, 0 to 2 percent slopes	–	–	X	–
455 – Polvadero sandy loam, 2 to 5 percent slopes	–	–	X	–
474 – Westhaven loam, 0 to 2 percent slopes	–	X	X	Gates
477 – Westhaven clay loam, 0 to 2 percent slopes	–	X	X	–
478 – Cerini sandy loam, 0 to 2 percent slopes, MLRA 17	X	X	–	–
479 – Cerini clay loam, 0 to 2 percent slopes	X	X	X	–
490 – Cerini sandy loam, subsided, 0 to 5 percent slopes	X	–	–	–
491 – Cerini clay loam, subsided, 0 to 5 percent slopes	X	–	–	–
492 – Panoche loam, subsided, 0 to 5 percent slopes	X	–	–	–
493 – Panoche clay loam, subsided, 0 to 5 percent slopes	X	–	–	–
640 – Kettleman-Delgado-Mercey association, 5 to 15 percent slopes, eroded	–	–	X	–
940 – Milham-Polvadero complex, organic surface, 0 to 5 percent slopes	–	X	–	–
960 – Excelsior, sandy substratum-Westhaven association, flooded, 0 to 2 percent slopes	–	X	X	Cantua

*Hydric soil map unit identified in USDA NRCS Hydric Soils List (USDA NRCS 2024b).

Ballvar Series

The Ballvar series consists of deep, well drained soils on alluvial fans. These soils formed in mixed alluvium from sedimentary rock. Slope ranges from 2 to 8 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is 62 degrees F. This soil series is well drained, has medium runoff, and moderately slow permeability.

Damluis Series

The Damluis series consists of very deep, well drained soils that formed in alluvium from mixed sources. Damluis soils are on low or uplifted dissected terraces and have slopes of 0 to 15 percent.

The mean annual precipitation is about 11 inches and the mean annual temperature is about 62 degrees F. This soil series is well drained, has negligible to high runoff, and slow permeability.

Buttonwillow Series

The Buttonwillow series consists of deep, somewhat poorly drained soils formed in alluvium weathered mainly from granite. Buttonwillow soils are in basins and have slopes of 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is 63 degrees F. This soil series is somewhat poorly drained with very slow runoff; and has slow permeability in the upper part of the textural control section, moderately rapid in the lower part, and slow below the control section. These soils are subject to rare flooding but are protected by dams and/or levees.

Lokern Series

The Lokern series consists of deep, somewhat poorly drained clayey soils formed from mixed but predominantly granitic alluvium. Lokern soils are on basins and have slopes of 0 to 2 percent. The mean annual precipitation is about 5 inches, and the mean annual temperature is about 63 degrees F. This soil series is somewhat poorly drained with slow to very slow runoff, and has slow permeability. The saline-alkali phase has very slow permeability. These soils are subject to rare flooding but are protected by dams and/or levees. The drainage on these soils has been altered by reclamation ditches and pumping.

Cerini Series

The Cerini series consists of very deep, well drained soils on alluvial fans with 0 to 5 percent slopes. These soils formed in alluvium derived dominantly from sedimentary rock. The mean annual precipitation is about 7 inches. This soil series drains well, has low to medium runoff, and moderately slow permeability.

Panoche Series

The Panoche series consists of very deep, well drained soils on alluvial fans and flood plains with 0 to 15 percent slopes. These soils formed in loamy calcareous alluvium from sedimentary rock. The mean annual precipitation is about 6 inches. This soil series is well drained, has negligible to medium runoff, and moderate permeability.

Excelsior Series

The Excelsior series consists of very deep, well drained soils on alluvial fans and bars and channels on flood plains on 0 to 2 percent slopes. These soils formed in mixed alluvium dominantly from igneous and calcareous sedimentary rocks. The mean annual precipitation is 7 inches. This soil series is well drained, has negligible to medium runoff, and moderate to slow permeability (particularly in saline-sodic horizons).

Milham Series

The Milham series consists of very deep, well drained soils on alluvial fans, plains, low terraces and fan remnants with 0 to 9 percent slopes. These soils formed in mixed calcareous alluvium weathered from granitic and sedimentary rock. The average annual precipitation is about seven inches. It is a well-drained soil with low to high runoff and moderately slow permeability.

Kimberlina Series

The Kimberlina series consists of very deep, well drained soils on flood plains and recent alluvial fans with 0 to 9 percent slopes. These soils formed in mixed alluvium derived dominantly from igneous and/or sedimentary rock sources. The mean annual precipitation is about six inches, and the mean annual temperature is about 64 degrees F. These are well-drained soils with negligible to medium runoff and slow permeability.

Kettleman-Delgado-Mercey Association

Kettleman Series

The Kettleman series consists of moderately deep, well drained soils on hills and uplands with 5 to 50 percent slopes. This soil is formed in material weathered from sandstone and shale. The mean annual precipitation is about 6 inches, and the mean annual temperature is about 64 degrees F. These are well-drained soils with medium to high runoff and moderate permeability.

Delgado Series

The Delgado series are shallow, somewhat excessively drained soils on hills, foothills and uplands with slopes between 5 and 75 percent. This soil is formed in material weathered from hard sandstones and shales. The mean annual precipitation is about seven inches, and the mean annual temperature is about 64 degrees F. These are somewhat excessively drained soils with medium to very high runoff and moderately rapid permeability.

Mercey Series

The Mercey series consists of moderately, well drained soils on hills and uplands with 5 to 50 percent slopes. This soil is formed in material weathered from sandstone or shale. The mean annual precipitation is about seven inches, and the mean annual temperature is about 64 degrees F. These are well-drained soils with high or very high runoff and moderately slow permeability.

Polvadero-Guijjaral Complex

Polvadero Series

The Polvadero series consists of very deep, well drained, sodic soils on fan remnants with 5 to 15 percent slopes. These soils formed in alluvium derived dominantly from calcareous sedimentary rock. The mean annual precipitation is about 7 inches. This soil series is well drained and moderately slow permeability.

Guijarral Series

The Guijarral series consists of very deep, well drained soils on fan remnants with 2 to 12 percent slopes. These soils formed in alluvium derived dominantly from calcareous sedimentary rock. The mean annual precipitation is about 7 inches. This soil is well drained with very low or low runoff and moderately rapid permeability.

Westhaven Series

The Westhaven series consists of very deep, well drained soils that formed in stratified mixed alluvium weathered from sedimentary and/or igneous rocks with 0 to 5 percent slopes. Westhaven

soils are on alluvial fans and flood plains. The mean annual precipitation is about 7 inches, and the mean annual temperature is about 64 degrees F. These are well-drained soils with low runoff and moderately slow permeability. This soil is subject to very rare to occasional flooding in some places, in others they are protected by dams and levees.

3.4 Vegetation Communities and Land Cover Types

The three alternative fiber line study areas were dominated by active agricultural fields (including with crops present and/or actively farmed) and non-active agricultural fields (areas that are regularly tilled/disked for weed control but are not currently in production) as well as developed/disturbed land covers. The four substation study areas were dominated by developed/disturbed land cover.

Vegetation communities within the alternative fiber line study areas and the Cantua Substation study area included atriplex scrub (*Atriplex sp.* Shrubland Alliance), annual grasslands (*Avena* spp.- *Bromus* spp. Herbaceous Semi-Natural Alliance), tamarisk thickets (*Tamarix* spp. Shrubland Semi-Natural Alliance), and Fremont cottonwood woodland (*Populus fremontii* Forest and Woodland Alliance). Vegetation communities are depicted in Appendix A, Figure 6. Non-dominant plant species observed included big saltbush (*Atriplex lentiformis*), black mustard (*Brassica nigra*), common sunflower (*Helianthus annuus*), Russian thistle (*Salsola tragus*), and flowering plants in the Asteracea family. No vegetation communities are present in the Los Banos, Midway, or Gates Substations study areas.

Table 6 includes a summary of vegetation communities and land cover types in the alternative fiber line study areas and substation study areas. Vegetation community and land cover type descriptions are provided below. A list of plant species observed is provided in Appendix E.

Table 6 Summary of Vegetation Communities and Land Cover Types in PG&E Downstream Upgrades Study Areas

Vegetation Community or Land Cover Type	Scenario 1 (acres)	Scenario 2 (acres)	Scenario 3 (acres)	Substations (acres)**
Active/Non-active Agriculture	235.66	602.59	428.59	Cantua: 2.36
Atriplex Scrub	45.06	–	–	–
California Annual Grassland	60.30	–	168.63	–
Tamarisk Thickets	–	2.49	1.43	–
Fremont Cottonwood Woodland*	–	–	–	Cantua: 0.58
Developed/Disturbed	26.99	65.16	11.76	Los Banos: 64.24 Cantua: 2.82 Gates: 107.64 Midway: 117.50
Total	**368.02**	**670.25**	**610.42**	**295.14**

*Fremont cottonwood woodland is ranked G2Q/S3 and is considered a sensitive natural community by CDFW (2023a).

**Approximate acreages based on estimated substation boundaries.

Active/Non-active Agriculture

This land cover type is not naturally occurring and is not described in the MCV2 (Sawyer et al. 2009) classification system. This land cover type includes active or non-active farmed land as defined above.

Agriculture is among the dominant land cover types in the alternative fiber line study areas and includes active and non-active agricultural fields. It is also present in the Cantua Substation study area. Crops encountered during the reconnaissance surveys included wheat fields, pistachio orchards, almond orchards, pomegranate orchards, tomato fields, onion fields, grape vineyards, and corn fields.

Atriplex Scrub

Atriplex scrub occurs where allscale saltbush (*Atriplex polycarpa*) or fourwing saltbush (*Atriplex canescens*) is dominant or co-dominant in the shrub canopy with white bursage (*Ambrosia dumosa*), cheesebush (*Ambrosia salsola*), spiny saltbush (*Atriplex confertifolia),* allscale saltbush (*Atriplex polycarpa),* yellow rabbitbrush (*Chrysothamnus viscidiflorus*), bladderpod (*Cleome isomeris*), green ephedra (*Ephedra viridis*), hop sage (*Grayia spinosa*), creosote bush (*Larrea tridentata*), or bush seepweed (*Suaeda moquinii*). Emergent trees may be present at low cover. The shrub canopy is open or intermittent, with a variable herbaceous layer with seasonal herbs and non-native grasses. This vegetation community is present intermittently in the Scenario 1 study area where it intersects undeveloped, remnant fragments of the eastern edge of the Ciervo Hills that extend east of I-5 and which have not been converted to agriculture.

California Annual Grassland

California annual grassland occurs where slender oats (*Avena barbata)*, wild oats (*Avena fatua*), false brome (*Brachypodium distachyon*), rattlesnake grass (*Briza maxima)*, ripgut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), and/or wall barley (*Hordeum murinum*) is dominant or co-dominant with other non-natives in the herbaceous layer such as Australian saltbush (*Atriplex semibaccata*) and *Hordeum* spp. Emergent trees and shrubs may be present at low cover. This vegetation community is present intermittently in the Scenario 1 and Scenario 3 study areas. In the Scenario 1 study area, it occurs in small, remnant and discontinuous fragments of the eastern edge of the Ciervo Hills that extend east of I-5 and which have not been converted to agriculture. In the Scenario 3 study area, annual grassland occurs in the 500 kV line transmission corridor located west of I-5 where it traverses several intermittent portions of the Big Blue Hills eastern foothills.

Tamarisk Thickets

This community occurs where tamarisk (*Tamarix ramosissima*) or another *Tamarix* species is dominant in the shrub canopy. Emergent trees may be present at low cover, including cottonwood (*Populus fremontii*) or willow (*Salix* spp). This community is present in Los Gatos Creek in the Scenario 2 and Scenario 3 study areas and Cantua Creek in the Scenario 2 study area.

Fremont Cottonwood Woodland

Fremont cottonwood woodland is dominated by Fremont cottonwood (*Populus fremontii*) or has a mixed canopy with other riparian tree species. The canopy is continuous to open and the shrub layer is intermittent to open. The herbaceous layer is variable. Fremont cottonwood forest and

woodland is found on floodplains, along low-gradient rivers, perennial or seasonally intermittent streams, springs, in lower canyons in desert mountains, in alluvial fans, and in valleys with a dependable subsurface water supply that varies considerably during the year (Sawyer et al. 2009). This community is present in Cantua Creek that passes through the Cantua Substation study area, but is outside the fenced substation boundary and proposed substation work footprint. While the individual cottonwood trees are located outside of the Cantua Substation study area, they help define the vegetation community in this portion of Cantua Creek. The portion of Cantua Creek within the Cantua Substation study area is relatively open with low shrub and herbaceous cover that in some years appears to be absent, presumably dependent on flow regime. This vegetation community is ranked G2Q/S3 and is considered a sensitive natural community by CDFW (2023a).

Developed/Disturbed

Developed/disturbed areas are present in the three alternative fiber line study areas and are the dominant land cover type in the four substation study areas. Developed/disturbed areas include non-naturally occurring areas devoid, or mostly devoid, of naturally occurring vegetation that have been previously disturbed by human activity. Development may be present on all or part of this land cover type. This land cover type also includes bare ground which includes cleared areas with no vegetation or existing development. This land cover type is present in small areas of Scenario 1, Scenario 2, and Scenario 3 study areas where limited developed uses intersect them (e.g., I-5, public roads, and other developed residential, commercial, or government facilities). The Los Banos, Gates, and Midway substations are characterized exclusively of this land cover type. The Cantua Substation is characterized exclusively of this land cover type within the substation fence line.

3.5 General Wildlife

Most wildlife detected during the reconnaissance survey were common to the region and were consistent with expectations for an agricultural setting of the Central Valley. Bird diversity was high and included common resident species, while mammal, reptile, and amphibian diversity were low. Common bird species observed included Eurasian collared dove (*Steptopelia decaocto*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura)*, red-tailed hawk (*Buteo jamaicensis)*, western kingbird (*Tyrannus verticalis*), barn swallow (*Hirundo rustica*), loggerhead shrike (*Lanius ludovicianus*), house finch (*Haemorhous mexicanus*), and American robin (*Turdus migratorius*). Common mammals observed included black-tailed jackrabbit (*Lepus californicus*), cottontail rabbit (*Sylvilagus audobonii*), and coyote (*Canis latrans*). A full list of wildlife detected during the surveys is included in Appendix E.

4 Sensitive Biological Resources Impacts Analysis

This section discusses special status species and sensitive biological resources observed in the study area and evaluates the potential for the site to support additional sensitive biological resources. Assessments for the potential occurrence of special status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB and other sources, species occurrence records from other sites in the vicinity of the survey area, previous reports for the project site, and the results of surveys of the project site. The potential for each special status species to occur in the study area was evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on the site if present (e.g., oak trees).
- **Low Potential.** Few of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

4.1 Special Status Species

The list of special status plant and wildlife species known to occur resulting from the literature review is included as Appendix C and their locations relative to the alternative fiber line study areas and substation study areas are depicted in Appendix A, Figure 7.

4.1.1 Special Status Plant Species

Rincon evaluated 89 special status plant species known to occur in the region (Appendix A, Figure 7; Appendix C). No special status plant species have high potential to occur in the alternative fiber line study areas or the substation study areas based on the absence of specific habitat features (i.e., mountains, forest, wetlands), elevation ranges, or other incompatible habitat conditions (e.g., vegetation assemblages, soils, topography, hydrology, and prior disturbances). Two special status plant species have moderate potential to occur in the Scenario 1 and Scenario 3 grassland habitats and no potential to occur in the Scenario 2 study area and substation study areas: San Benito poppy

(*Eschscholzia hypecoides*; California Rare Plant Rank [CRPR] 4.3) and stinkbells (*Fritillaria agrestis*; CRPR 4.2). Of those with low potential to occur, only one is federally listed: San Joaquin woollythreads (*Monolopia congdonii*; federally endangered, CRPR 1B.2). These three species are discussed in more detail below. The remaining species with low potential to occur have CRPRs, but are not listed under the federal or state Endangered Species Acts. All 89 special status plant species are addressed in Appendix C.

San Benito poppy (Eschscholzia hypecoides) – CRPR 4.3

San Benito poppy is an annual herb that occurs in chaparral, cismontane woodland and valley and foothill grassland on serpentine clay soils. The known elevation range for this species is 655 to 4,920 feet amsl. It blooms from March to June.

Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Potentially suitable grassland habitat with washes is present in the Scenario 1 and Scenario 3 study areas; however, the Scenario 1 study area is just outside the low end of the elevation range for this species. No CNDDB records of this species resulted from the database query. However, multiple recent CNPS records are present in the Ciervo Hills at much higher elevations, and one historical CNPS record (1988) is located in Cantua Creek wash within the Scenario 3 study area. As a result, this species has low potential to occur in the Scenario 1 study area and moderate potential to occur in the Scenario 3 study area grassland habitats, particularly along washes. It is not expected to occur in the Scenario 2 study area or substation study areas.

Stinkbells (Fritillaria agrestis) – CRPR 4.2

Stinkbells is a perennial bulbiferous herb that occurs in chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland sometimes on serpentine soils. It is mostly found in nonnative grassland or in grassy openings in clay soil. The known elevation range for this species is 35 to 5,100 feet amsl. It blooms from March to June.

Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Marginally suitable grassland habitat is present in the Scenario 1 and Scenario 3 study areas. One historical (greater than 30 years old) CNDDB record and multiple recent CNPS records resulting from the database query are documented along San Joaquin Ridge near Joaquin Rocks overlook in the Diablo Range at 3,000 feet in elevation west of the Scenario 3 study area, with notes indicating their presence in areas with off-road vehicle and cattle grazing activity. As a result, this species has low potential to occur in the Scenario 1 study area and moderate potential to occur in the Scenario 3 study area grassland habitats, particularly along washes. It is not expected to occur in the Scenario 2 study area or substation study areas.

San Joaquin Woollythreads (Monolopia congdonii) – Federally Endangered, CRPR 1B.2

San Joaquin woollythreads is an annual herb that occurs in cismontane woodland and valley and foothill grassland. While it is also noted as occurring in vernal pools, it does not necessarily require them. The known elevation range for this species is 215 to 3,280 feet amsl. It blooms from April to August.

Potentially suitable chenopod scrub and grassland habitat occur in portions of the Scenario 1 and Scenario 3 study areas that intersect undeveloped remnants of the Ciervo Hills located east of I-5 (Scenario 1) and the undeveloped eastern edge of the Big Blue Hills (Scenario 3). The closest CNDDB

records to the Scenario 1 and Scenario 3 study areas are from the 1890s, 1930s, and 1940s, and noted as extirpated or possibly extirpated based on re-surveys in the 1980s. Otherwise, other occurrences are recorded in the Kettleman Hills south of the Gates Substation and at or further west of the Monvero Residual Dunes at higher elevations in the Ciervo Hills. As a result, this species has low potential to occur in the chenopod scrub and grassland habitats in the Scenario 1 and Scenario 3 study areas. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the dominance of agriculture and developed land cover and lack of suitable habitat in those areas.

Impact Analysis

Should San Joaquin woollythreads, San Benito poppy, stinkbells or CRPR plant species with low potential to occur (see Appendix C) be present within the work areas in chenopod scrub and grassland habitats in the Scenario 1 and Scenario 3 study areas, direct impacts could occur through loss of individuals to crushing by heavy equipment during construction and O&M activities. Indirect impacts could result from habitat modifications, such as by the introduction of invasive plants disseminated from construction equipment, contamination of soils, and habitat degradation due to accidental fuel spills during construction and O&M activities. As noted under *Project Description*, pull/splice sites and HLZs would require minor ground disturbance in the form of drive and crush, but not grading. These sites would be accessed generally along existing unimproved roads or improved unsurfaced or surfaced roads and no new roads would be constructed or improved. Helicopters may be used to place materials at the HLZs for structures inaccessible by existing roads or as otherwise needed. Furthermore, HLZs would be located outside of the grassland and atriplex scrub vegetation communities in the Scenario 1 study area, as feasible. As a result, the potential for direct or indirect impacts exists within the Scenario 1 and Scenario 3 study areas and no impact would occur in the Scenario 2 study area or in the substation study areas.

Direct and indirect construction impacts to special status plant species would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction surveys during appropriate blooming periods for target species, salvage and/or seed collection as required by applicable law, fugitive dust control to minimize dust drift into adjacent areas, equipment cleaning prior to entering work areas to avoid invasive species spread, a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources, minimization of disturbance areas, and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the Scenario 1 and Scenario 3 Fiber Lines would occur within an existing transmission route. As a result, O&M activities associated with implementation of the Scenario 1 Fiber Line or Scenario 3 Fiber Line would not increase the potential for direct or indirect impacts to special status plant species beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for the existing transmission route. In addition, San Joaquin woollythreads is a covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable Avoidance and Minimization Measures [AMMs]) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, San Joaquin woollythreads, San Benito poppy, and stinkbells have low potential to occur in the Scenario 1 study area scrub and grassland habitats. Potential direct or indirect construction impacts to these species would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin woollythreads, San Benito poppy, and stinkbells from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin woollythreads, San Benito poppy, or stinkbells beyond existing conditions and would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable for San Joaquin woollythreads as a covered species. Therefore, no new O&M impact to San Joaquin woollythreads, San Benito poppy, or stinkbells would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, San Joaquin woollythreads, San Benito poppy, and stinkbells are not expected to occur in the Scenario 2 study area due to the dominance of agriculture and lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to San Joaquin woollythreads, San Benito poppy, or stinkbells would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, San Joaquin woollythreads, San Benito poppy, and stinkbells have low potential to occur in the grassland habitat in the Scenario 3 study area. Potential direct or indirect construction impacts to these species would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin woollythreads, San Benito poppy, and stinkbells from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin woollythreads, San Benito poppy, and stinkbells beyond existing conditions and would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable for San Joaquin woollythreads as a covered species. Therefore, no new O&M impact to San Joaquin woollythreads, San Benito poppy, or stinkbells would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, San Joaquin woollythreads, San Benito poppy, and stinkbells are not expected to occur in the substation study areas due to the dominance of developed/disturbed and agricultural land cover and lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to San Joaquin woollythreads, San Benito poppy, or stinkbells would occur as a result of implementing proposed activities at the substations.

4.1.2 Special Status Wildlife Species

Rincon evaluated 59 special status wildlife species known to occur in the region (Appendix A, Figure 7; Appendix C). Of those, 24 species have moderate or high potential to occur in one or more of the three alternative fiber line study areas or substation study areas. The assessment is based on the presence of suitable habitat as identified during the survey and existing knowledge of species occurrences and distributions in the region. The remaining 35 species have low potential to occur or are not expected to occur in any of the three alternative fiber line study areas and substation study areas due to limited habitat components meeting the species' requirements and/or because the majority of habitat on and adjacent to the three alternative fiber line study areas is unsuitable or of poor quality. Table 7 summarizes the special status wildlife species with moderate or high potential to occur in one or more of the three alternative fiber line study areas or the four substation study areas.

Species discussions, including life history, documented occurrences, impacts, and measures for reducing impacts, are discussed further below, grouped according to species sensitivity status and/or expected habitat use in the alternative fiber line study areas and substation study areas.

Table 7 Summary of Special Status Wildlife Species with Moderate or High Potential to Occur in PG&E Downstream Upgrades Study Areas

Common Name	Scientific Name	Agency Status (Fed/State/Other)	Potential to Occur in Study Areas			
			Scenario 1	Scenario 2	Scenario 3	Substations
Reptiles						
California glossy snake	*Arizona elegans occidentalis*	–/–/SSC	High	None	High	None
blunt-nosed leopard lizard	*Gambelia sila*	FE/SE/FP	Moderate	None	Moderate	None
San Joaquin coachwhip	*Masticophis flagellum ruddocki*	–/–/SSC	Moderate	Low	Moderate	Low – Cantua None – Los Banos, Midway, Gates
coast horned lizard	*Phrynosoma blainvillii*	–/–/SSC	Moderate	None	Low	None
Birds						
tricolored blackbird	*Agelaius tricolor*	–/ST/SSC	Moderate (f) Low (n)	Moderate (f) Low (n)	Moderate (f) Low (n)	Moderate (f) – Cantua Low (n) – Cantua None (f, n) – Los Banos, Midway, Gates
golden eagle	*Aquila chrysaetos*	–/ST/FP	High (f) None (n)	High (f) None (n)	High (f) None (n)	High (f) – Cantua None (n) - Cantua None (f, n) – Los Banos, Midway, Gates
burrowing owl	*Athene cunicularia*	–/–/SSC	High (f, n)	High (f, n)	High (f, n)	High (f, n) - Cantua None (f, n) – Los Banos, Midway, Gates
ferruginous hawk	*Buteo regalis*	–/–/WL	High (f) None (n)	High (f) None (n)	High (f) None (n)	High (f) – Cantua None (n) - Cantua None (f, n) – Los Banos, Midway, Gates

Common Name	Scientific Name	Agency Status (Fed/State/Other)	Potential to Occur in Study Areas			
			Scenario 1	Scenario 2	Scenario 3	Substations
Swainson's hawk	*Buteo swainsoni*	–/ST/–	High (f) None (n)	High (f) Moderate (n)	High (f) Moderate (n)	High (f) – Cantua Moderate (n) - Cantua None (f, n) – Los Banos, Midway, Gates
mountain plover	*Charadrius montanus*	–/–/SSC	High (f) None (n)	High (f) None (n)	High (f) None (n)	High (f) – Cantua None (n) - Cantua None (f, n) – Los Banos, Midway, Gates
northern harrier	*Circus hudsonius*	–/–/SSC	High (f) Moderate (n)	High (f) None (n)	High (f) Moderate (n)	High (f) – Cantua None (n) – Cantua None (f, n) – Los Banos, Midway, Gates
white-tailed kite	*Elanus leucurus*	–/ST/FP	High (f) None (n)	High (f) None (n)	High (f) None (n)	High (f) – Cantua None (n) - Cantua None (f, n) – Los Banos, Midway, Gates
California horned lark	*Eremophila alpestris*	–/–/WL	High (f, n)	High (f, n)	High (f, n)	High (f, n) – Cantua None (f, n) – Los Banos, Midway, Gates
prairie falcon	*Falco mexicanus*	–/–/WL	High (f) None (n)	High (f) None (n)	High (f) None (n)	High (f) – Cantua None (n) – Cantua None (f, n) – Los Banos, Midway, Gates
loggerhead shrike	*Lanius ludovicianus*	–/–/SSC	High (f) Low (n)	High (f) None (n)	High (f) None (n)	High (f) – Cantua None (n) – Cantua None (f, n) – Los Banos, Midway, Gates
Oregon vesper sparrow	*Pooecetes gramineus*	–/–/SSC	High (w)	High (w)	High (w)	High (w) – Cantua None (w) – Los Banos, Midway, Gates
yellow warbler	*Setophaga petechia*	–/–/SSC	Moderate (m)	Moderate (m)	Moderate (m)	Moderate (m) – Cantua None (m) – Los Banos, Midway, Gates
yellow-headed blackbird	*Xanthocephalus xanthocephalus*	–/–/SSC	Moderate (f) None (n)	Moderate (f) None (n)	Moderate (f) None (n)	Moderate (f) – Cantua None (n) – Cantua None (f, n) – Los Banos, Midway, Gates
Mammals						
Nelson's (=San Joaquin) antelope squirrel	*Ammospermophilus nelson*	–/ST/–	Moderate	None	Low	None
giant kangaroo rat	*Dipodomys ingens*	FE/SE/–	Moderate	None	Moderate	None
short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	–/–/SSC	Moderate	None	Low	None

Common Name	Scientific Name	Agency Status (Fed/State/Other)	Potential to Occur in Study Areas			
			Scenario 1	Scenario 2	Scenario 3	Substations
Tulare grasshopper mouse	*Onychomys torridus*	–/–/SSC	Moderate	None	Low	None
American badger	*Taxidea taxus*	–/–/SSC	High	High	High	High – Cantua None – Los Banos, Midway, Gates
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/ST/–	Moderate	Low	Moderate	Low – Cantua None – Los Banos, Midway, Gates

(f) = Foraging	FE = Federally Endangered	ST = State Threatened
(n) = Nesting	FT = Federally Threatened	SCE = State Candidate Endangered
(w) = Wintering	FC = Federal Candidate	FP = CDFW Fully Protected
(m) = Migration	FD = Federal Delisted	SSC = CDFW Species of Special Concern
	FP = State Fully Protected	WL = CDFW Watch List
	SE = State Endangered	

Reptiles – CDFW Species of Special Concern

California Glossy Snake (Arizona elegans occidentalis) – CDFW Species of Special Concern

California glossy snake is a medium-sized muscular snake with smooth, glossy scales, a faded or bleached-out appearance, and a short tail. This is a nocturnal species that hides underground in the daytime under rocks, existing burrows, or uses its specialized nose to dig burrows. It is patchily distributed in the southern San Joaquin Valley. As a generalist, it is reported from a range of scrub and grassland habitats, often with loose or sandy soils. Areas of potentially suitable scrub and grassland habitat occur within the Scenario 1 and Scenario 3 study areas where they intersect the undeveloped remnants of the Ciervo Hills east of I-5 (Scenario 1) and the undeveloped eastern edge of the Big Blue Hills (Scenario 3). The most recent CNDDB occurrence was documented in 2015 0.1 mile east of the Scenario 3 study area near the intersection of Coalinga Road and I-5. This species has high potential to occur in the Scenario 1 and Scenario 3 study areas; it has no potential to occur in the Scenario 2 study area and in the substation study areas due to the dominance of agriculture and developed/disturbed land covers and the lack of suitable scrub and grassland habitat in those study areas.

San Joaquin Coachwhip (Masticophus flagellum ruddocki) – CDFW Species of Special Concern

San Joaquin coachwhip occurs in open, dry, treeless areas, including grassland and saltbush scrub, and feeds on small mammals including bats, nestling and adult birds, bird eggs, lizards, snakes, amphibians, and carrion. Hatchlings and juveniles will eat large invertebrates (Nafis 2024). This species takes refuge in rodent burrows, under shaded vegetation and surface objects (NatureServe 2024). Areas of potentially suitable scrub and grassland habitat with little or no tree cover occur in the Scenario 1 and Scenario 3 study areas where they intersect undeveloped remnants of the Ciervo Hills east of I-5 and the Big Blue Hills. The species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas. Additionally, this species has been recorded on a limited number of occasions on the margins of roads in agricultural areas. The most recent CNDDB occurrence was

documented in 2009 approximately 6.5 miles northwest of the northern end of Scenario 1 study area in a disturbed area between an agricultural field and annual grassland. As a result, the species has low potential to occur in the Scenario 2 study area, which is dominated by agricultural land cover, and the Cantua Substation study area, which includes a small portion of agricultural land cover. The species is not expected to occur in the Los Banos, Midway, or Gates substation study areas due to the lack of suitable habitat.

Coast Horned Lizard (Phrynosoma blainvillii) – CDFW Species of Special Concern

Coast horned lizard occurs in a variety of habitats, but most commonly in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants and other insects are required. This species has moderate potential to occur in the Scenario 1 study area where atriplex scrub occurs in the undeveloped remnants of the Ciervo Hills east of I-5 , and low potential to occur in the annual grasslands in both the Scenario 1 and Scenario 3 study areas. This species is not expected to occur in the Scenario 2 study area or in the substation study areas, which are dominated by agriculture and/or developed land cover and lack suitable habitat for the species. The closest two CNDDB records for this species are from 1986 in the Monvero Residual Dunes of the Ciervo Hills approximately 5 miles west of the Scenario 1 study area.

Impact Analysis

Direct impacts to California glossy snake, San Joaquin coachwhip, and coast horned lizard (all CDFW Species of Special Concern) during construction or O&M could include injury or death as a result of individuals being crushed or buried by project vehicles, equipment, or displaced soil, entrapment of individuals in excavation areas, or disturbance of individuals by construction-related noise and vibration. Potential indirect impacts could include the introduction or spread of invasive plant species or fugitive dust that could degrade foraging habitat or refugia. Human activities and food waste may also pose threats by attracting opportunistic predators such as ravens, coyotes, and feral dogs to construction work areas.

As noted under *Project Description*, pull/splice sites and HLZs would require minor ground disturbance in the form of drive and crush, but not grading. These sites would be accessed generally along existing unimproved roads or improved unsurfaced or surfaced roads and no new roads would be constructed. Helicopters may be used to place materials at the HLZs for structures inaccessible by existing roads or as otherwise needed. Furthermore, HLZs would be located outside of the grassland and atriplex scrub vegetation communities in the Scenario 1 study area, as feasible. As a result, the potential for direct or indirect impacts exists within the Scenario 1 and Scenario 3 study areas for all three species (where they have moderate or high potential to occur), and the Scenario 2 study area and Cantua Substation study area for only San Joaquin coachwhip (where it has low potential to occur). No impacts would occur in the Los Banos, Midway, or Gates substation study areas.

Based on guidance from CDFW, the impacts to non-listed species under CEQA should generally consider factors such as population-level effects, the proportion of the species range affected by the project, regional effects, and impacts to habitat features (CDFW 2024f). Potential direct and indirect construction impacts to California glossy snake and coast horned lizard in the Scenario 1 and Scenario 3 study areas, and San Joaquin coachwhip in all three alternative scenario study areas and Cantua Substation study area may affect a few individuals, but would not affect the regional populations, and would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), which require pre-construction surveys; preparation of a

plan to address potential impacts to these species to be approved by CDFW; establishment of a 50-foot no disturbance buffer around burrows where coast horned lizard are present; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the Scenario 2 and Scenario 3 Fiber Lines and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the Scenario 2 and Scenario 3 Fiber Lines and proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to San Joaquin coachwhip, California glossy snake, or coast horned lizard beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, substation.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, California glossy snake has high potential to occur, and San Joaquin coachwhip and coast horned lizard have moderate potential to occur in the Scenario 1 study area chenopod scrub or grassland habitats. Potential direct or indirect construction impacts to these species in the Scenario 1 study area may affect a few individuals, but would not affect regional populations, and would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct or indirect construction impacts to California glossy snake, San Joaquin coachwhip, and coast horned lizard from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to California glossy snake, San Joaquin coachwhip, or coast horned lizard beyond existing conditions. Therefore, no new O&M impact to California glossy snake, San Joaquin coachwhip, or coast horned lizard would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, California glossy snake and coast horned lizard are not expected to occur in the Scenario 2 study area. Therefore, no direct or indirect construction or O&M impact to California glossy snake and coast horned lizard would occur as a result of implementing the Scenario 2 Fiber Line.

San Joaquin coachwhip has low potential to occur in the Scenario 2 study area. Potential direct or indirect construction impacts to San Joaquin coachwhip in the Scenario 2 study area may affect a few individuals, but would not affect the regional population, and would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin coachwhip from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin coachwhip beyond existing conditions. Therefore, no new O&M impact to San Joaquin coachwhip would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, California glossy snake has high potential occur, San Joaquin coachwhip has moderate potential to occur, and coast horned lizard has low potential to occur in the Scenario 3 study area. Potential direct or indirect construction impacts to these species in the Scenario 3 study area may affect a few individuals, but would not affect regional populations, and would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct or indirect construction impacts to California glossy snake, San Joaquin coachwhip, and coast horned lizard from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to California glossy snake, San Joaquin coachwhip, or coast horned lizard beyond existing conditions. Therefore, no new O&M impact to California glossy snake, San Joaquin coachwhip, or coast horned lizard would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, California glossy snake and coast horned lizard are not expected to occur in the four substation study areas, and San Joaquin coachwhip is not expected to occur in the Los Banos, Midway, or Gates substation study areas due to the dominance of developed/disturbed land cover and lack of suitable habitat. Therefore, no potential direct or indirect construction or O&M impact to California glossy snake or coast horned lizard would occur as a result of implementing proposed activities at the threesubstations. Similarly, no potential direct or indirect construction or O&M impact to San Joaquin coachwhip would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

San Joaquin coachwhip has low potential to occur in the Cantua Substation study area with agricultural land cover. Potential direct or indirect construction impacts to San Joaquin coachwhip in the Cantua Substation study area may affect a few individuals, but would not affect the regional population, and would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct or indirect construction impacts to San Joaquin coachwhip from implementation of proposed activities in Cantua Substation would be less than significant.

O&M activities associated with implementing proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to San Joaquin coachwhip beyond existing conditions. Therefore, no new O&M impact to San Joaquin coachwhip would occur as a result of implementing proposed activities at Cantua Substation.

Reptiles – Federally and State Listed Species

Blunt-Nosed Leopard Lizard (Gambelia sila) – Federally Endangered, State Endangered, CDFW Fully Protected)

Blunt-nosed leopard lizard is a relatively large lizard that is part of the iguana family. It has a long tail, powerful hind limbs and a short, blunt snout. They are yellowish to dark brown with rows of dark spots across their backs. The blunt-nosed leopard lizard lives on the San Joaquin Valley floor and surrounding foothills in Central California. Historically, it lived in arid lands throughout much of the San Joaquin Valley and adjacent foothills. It is a resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. It seeks cover in mammal burrows, under shrubs or structures such as fence posts; it does not excavate its own burrows.

Areas of marginally suitable scrub habitat occur within the Scenario 1 study area where it intersects undeveloped remnants of the Ciervo Hills on the east side of I-5 that contain atriplex scrub. A portion of the Scenario 3 study area includes annual grassland in the Big Blue Hills and Ciervo Hills; this area generally has high topographic relief and dense annual grassland vegetation, with few shrubs for cover. However, the Scenario 3 study area includes a dirt access road along the transmission corridor and also intersects areas showing signs of past cattle crazing, which may have created marginally suitable sparsely vegetated areas. As a result, this species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas. The Scenario 2 study area and substation study areas are dominated by agricultural and/or developed/disturbed land covers, which are regularly disked or maintained and do not offer relatively permanent suitable bare ground and shrubs for the species. As a result, there is no suitable scrub habitat present in the Scenario 2 study area or in the substation study areas, and the species is not expected to occur there.

Impact Analysis

Direct impacts to blunt-nosed leopard lizard during construction or O&M could include injury or death as a result of individuals being crushed or buried by project vehicles, equipment, or displaced soil, entrapment of individuals in excavation areas, or disturbance of individuals by construction-related noise and vibration. Potential indirect impacts could include the introduction or spread of invasive plant species or fugitive dust that could degrade foraging habitat or refugia. Human activities and food waste may also pose threats by attracting opportunistic predators such as ravens, coyotes, and feral dogs to construction work areas.

As noted under *Project Description*, pull/splice sites and HLZs would require minor ground disturbance in the form of drive and crush, but not grading. These sites would be accessed generally along existing unimproved roads or improved unsurfaced or surfaced roads and no new roads would be constructed. Helicopters may be used to place materials at the HLZs for structures inaccessible by existing roads or as otherwise needed. Furthermore, HLZs would be located outside of the grassland and atriplex scrub vegetation communities in the Scenario 1 study area, as feasible. As a result, the potential for direct or indirect impacts to blunt-nosed leopard lizard exists within the Scenario 1 and Scenario 3 study areas. No impacts to blunt-nosed leopard lizard would occur within the Scenario 2 study area or in the substation study areas.

Potential direct construction impacts to blunt-nosed leopard lizard would be avoided through implementation of the standard PG&E Construction Measures, which require protocol surveys for blunt-nosed leopard lizard no more than one year prior to initiation of work activities,

identification of potential blunt-nosed leopard lizard sign and burrows and determination of occupancy status, exclusion fencing around work areas with no blunt-nosed leopard lizard sign or appropriate burrow habitat, and consultation with USFWS and CDFW to prepare a blunt-nosed leopard lizard avoidance plan and restricting construction activities to the species' active period (April to early November) to be monitored by a qualified biologist for those work areas with documented blunt-nosed leopard lizard. . Potential indirect construction impacts to blunt-nosed leopard lizard would also be avoided through implementation of the standard PG&E Construction Measures, which require fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the Scenario 1 and Scenario 3 Fiber Lines would occur on existing distribution structures and within existing transmission routes. As a result, O&M activities associated with implementation of the Scenario 1 and Scenario 3 Fiber Lines would not increase the potential for direct or indirect impacts to blunt-nosed leopard lizard beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures and transmission routes. Moreover, blunt-nosed leopard lizard is a covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, blunt-nosed leopard lizard has moderate potential to occur in the Scenario 1 study area scrub habitat. Potential direct and indirect construction impacts to blunt-nosed leopard lizard would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no direct construction impacts to blunt-nosed leopard lizard would occur from implementation of the Scenario 1 Fiber Line, and potential indirect construction impacts from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to blunt-nosed leopard lizard beyond existing conditions and would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to the species. Therefore, no new O&M impact to blunt-nosed leopard lizard would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, blunt-nosed leopard lizard is not expected to occur in the Scenario 2 study area due to the dominance of agricultural land cover, which is regularly disked or maintained and does not offer relatively permanent suitable bare ground and shrubs for the species. Therefore, no direct

or indirect construction or O&M impact to blunt-nosed leopard lizard would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, blunt-nosed leopard lizard has moderate potential to occur in the Scenario 3 study area grassland habitat. Potential direct and indirect construction impacts to blunt-nosed leopard lizard would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no direct construction impacts to blunt-nosed leopard lizard would occur from implementation of the Scenario 3 Fiber Line, and potential indirect construction impacts from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to blunt-nosed leopard lizard beyond existing conditions and would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to the species. Therefore, no new O&M impact to blunt-nosed leopard lizard would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, blunt-nosed leopard lizard is not expected to occur in the substation study areas due to the dominance of developed/disturbed and agricultural land cover and lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to blunt-nosed leopard lizard would occur as a result of implementing proposed activities at the substations.

Birds (Raptors) – Non-Listed, Non-Nesting, Foraging Only Species

Golden Eagle (Aquila chrysaetos) – CDFW Fully Protected

Golden eagles generally inhabit open and semi-open habitats such as prairies, sagebrush scrub, savannahs, and barren areas, especially in hilly or mountainous regions with sufficient mammalian prey base and nearby suitable nesting sites. This species feeds primarily on rabbits, hares, and ground squirrels and may also consume carrion (Kochert et al. 2002). Nesting sites are most often on rock ledges or cliffs but may also be found in large trees, on steep hillsides, or on the ground (Great Basin Bird Observatory 2010). Golden eagles are permanent residents and migrants throughout California except the center of the Central Valley (Zeiner et al. 1990). Golden eagle was observed flying over the Darden Clean Energy Project PV solar array footprint in May 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). The alternative fiber line study areas are outside the nesting range of this species; however, they contain potentially suitable foraging habitat. As a result, the species is not expected to nest, but has high potential for incidental foraging in the alternative fiber line study areas and in the Cantua Substation study area with agricultural land cover. The Los Banos, Midway, and Gates Substations study areas are also outside the nesting range of this species and are dominated by developed/disturbed land cover and do not contain suitable foraging habitat. As a result, golden eagle is not expected to nest or forage in the Los Banos, Midway, or Gates Substations study areas.

Ferruginous Hawk (Buteo regalis) – CDFW Watch List

Ferruginous hawks inhabit open areas including open grasslands, sagebrush flats, desert scrub, low foothill fringes of pinyon and juniper habitats throughout western North America from southern Canada to Central Mexico between the Great Plains and the Rocky Mountains (Zeiner et al. 1990). This species breeds in the northern states and Canada, and winters south from California and Texas to Mexico. Wintering habitat consists of open grasslands, deserts, and cultivated fields (Ng et al. 2020). The ferruginous hawk is a California winter resident from August to early March. Ferruginous hawks feed primarily on rabbits, ground squirrels, and prairie dogs. Breeding for ferruginous hawks begins in April and are single-brooded (Ng et al. 2020). This species was documented actively foraging in the Darden Clean Energy Project PV solar array footprint in December 2022, as described in the Opt-In Application (IP Darden I and Rincon 2023). Sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats do not occur within the alternative fiber line study areas or substation study areas. However, open agricultural fields suitable for foraging do occur in the Scenario 1, Scenario 2, and Scenario 3 study areas and in a portion of the Cantua Substation study area, in which the species has high potential to forage and no potential to nest. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. Nesting is not expected in this region.

White-Tailed Kite (Elanus leucurus) – CDFW Fully Protected

White-tailed kites occur in coastal and valley lowlands, often in agricultural areas. Substantial groves of dense, broad-leafed deciduous trees are used for nesting and roosting, with nests placed usually 20- to 100-feet above ground near open foraging areas. This species preys mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians. This species forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands (Zeiner et al. 1988). White-tailed kite was observed foraging along a canal within the Darden Clean Energy Project PV solar array footprint in May 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). All three alternative fiber line study areas and the Cantua Substation study area contain suitable agricultural land in which the species has high potential to forage. The species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. Suitable nest trees are absent from the three alternative fiber line study areas and the substation study areas, and nesting has not been documented for this species within 10 miles.

Prairie Falcon (Falco mexicanus) – CDFW Watch List

Prairie falcons inhabit grasslands, desert, scrub, and agricultural lands, where they pursue birds, mammals, and reptiles as prey. California ground squirrel is likely a common prey item where this mammal is abundant. Prairie falcons use dry, open areas with cliffs and bluffs for nesting. They prefer cliffs with a sheltered ledge with loose debris or gravel for a nest but may also nest in caves or other cavities and crevices. Prairie falcons reuse nest sites in subsequent years (Zeiner et al. 1990). Potentially suitable foraging habitat exists for this species throughout the open grasslands, shrublands, and agricultural fields in the Scenario 1, Scenario 2, and Scenario 3 study areas, as well as in the portion of Cantua Substation study area with agricultural land cover. This species was documented foraging in the Darden Clean Energy Project footprint in December 2022 and April 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). As a result, it has high potential to forage in the Scenario 1, Scenario 2, and Scenario 3 study areas, and in the Cantua Substation study area. The species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to the dominance of developed/disturbed land cover and lack of

suitable foraging habitat. No suitable nesting habitat along cliffs occurs in the alternative fiber line study areas or the substation study areas; therefore, it is not expected to nest within any of the alternative fiber line study areas or substation study areas.

Impact Analysis

Golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon occurrences in any of the alternative fiber line study areas or substation study areas would be incidental during migration, dispersal, or typical foraging behaviors and these highly mobile species would be able to avoid direct impacts during construction and O&M. None of these species are expected to nest in the substation study areas due to the dominance of developed/disturbed and agricultural land cover and lack of suitable nesting habitat; however, they may perch on facilities or equipment incidentally while moving through the area. The standard PG&E Construction Measures would also be implemented, which require a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F). Moreover, none of these species would be expected to rely exclusively on any of the three alternative fiber line study areas or substation study areas for breeding, foraging, or wintering habitat; therefore, no indirect impacts are expected from construction or O&M.

Implementation of the alternative fiber line scenarios and proposed activities at the substations would occur on existing distribution structures and within existing transmission routes and substations. As a result, O&M activities associated with implementation of the three alternative fiber line scenarios and proposed activities at substations would not increase the potential for direct or indirect impacts to golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substations. In addition, golden eagle and white-tailed kit are covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit for golden eagle and white-tailed kite.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon occurrences in the Scenario 1 study area would be incidental and individuals would be able to avoid direct impacts during construction and O&M. Indirect impacts to these species are not expected as they would not rely exclusively on the Scenario 1 study area for breeding, foraging, or wintering habitat. The standard PG&E Construction Measures (Appendix F) would be implemented, further avoiding potential construction impacts. O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to these species beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to golden eagle and white-tailed kite. Therefore, no direct or indirect

construction or new O&M impact to golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon occurrences in the Scenario 2 study area would be incidental and individuals would be able to avoid direct impacts during construction and O&M. Indirect impacts to these species are not expected as they would not rely exclusively on the Scenario 2 study area for breeding, foraging, or wintering habitat. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding potential construction impacts. O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to these species beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to golden eagle and white-tailed kite. Therefore, no direct or indirect construction or new O&M impact to golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon occurrences in the Scenario 3 study area would be incidental and individuals would be able to avoid direct impacts during construction and O&M. Indirect impacts to these species are not expected as they would not rely exclusively on the Scenario 3 study area for breeding, foraging, or wintering habitat. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding potential construction impacts. O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to these species beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to golden eagle and white-tailed kite. Therefore, no direct or indirect construction or new O&M impact to golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, golden eagle, ferruginous hawk, white-tailed kite, and prairie falcon occurrences in the substation study areas would be incidental and individuals would be able to avoid direct impacts during construction and O&M. Indirect impacts to these species are not expected as suitable breeding, foraging, or wintering habitat is not present in the Los Banos, Midway, or Gates Substations study areas; agricultural land cover is present in a portion of the Cantua Substation study area that could provide potentially suitable foraging habitat (but no breeding habitat), on which these species would not rely exclusively. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding potential construction impacts. O&M activities associated with implementing proposed activities at the substations would not increase potential for direct or indirect impacts to these species beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to golden eagle and white-tailed kite. Therefore, no direct or indirect construction or new O&M impact to golden eagle, ferruginous hawk, white-tailed kite, or prairie falcon would occur as a result of implementing proposed activities at the substations.

Birds (Passerines) – Non-Listed, Non-Nesting, Foraging Only Species

Mountain Plover (Charadrius montanus) – CDFW Species of Special Concern

Mountain plovers are found on short grasslands and plowed fields of the Central Valley from Sutter and Yuba counties southward. They are winter residents from September through March (Hunting and Edson 2008). Agricultural fields suitable for foraging occur in the Scenario 1, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area with agricultural land cover. This species was documented foraging in the Darden Clean Energy Project PV solar array footprint as described in the Opt-In Application (IP Darden I and Rincon 2023). The species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. Mountain plover are winter residents of California and are not known to breed in the state. As a result, the species is not expected to nest in any of the alternative fiber line study areas or in the substation study areas.

Oregon Vesper Sparrow (Pooecetes gramineus) – CDFW Species of Special Concern

Oregon vesper sparrow is a grassland species that winters in the western Sierra Nevada foothills, western foothills of the San Joaquin Valley, and on the southern coast. The species is found in open areas with sparse or short vegetation, including road edges, weedy agricultural fields, alfalfa, and washes, as well as semi-desert scrub and areas with sandy substrate, and feeds on invertebrates and seeds September through March (Shuford and Gardali 2008). This species was observed in the Darden Clean Energy Project PV solar array footprint in April 2023. Retired and managed agricultural fields in the Scenario 1, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area provide suitable foraging habitat. The species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. It is a winter resident in California and not expected to nest in any of the alternative fiber line study areas or in the substation study areas.

Yellow Warbler (Setophaga petechia) – CDFW Species of Special Concern

Yellow warbler occurs in riparian deciduous habitat with cottonwoods, willows, alders, and other trees and shrubs in open-canopy riparian woodland in lower elevations and foothills from northern California to the south coastal areas. During the breeding seasons, this species uses open to medium-density woodlands and forests with a heavy brush understory for nesting and tall trees for singing. They forage on insects and spiders in the upper canopy of deciduous trees and shrubs and occasionally eat berries. Yellow warblers winter in the Imperial Valley and along the Colorado River in southern California, and occur widely across the state during migration (Zeiner et al. 1988). This species was observed in the Darden Clean Energy Project PV solar array footprint in May 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). There is no suitable woodland/shrub nesting habitat in the alternative fiber line study areas or in the substation study areas. Fremont cottonwood woodland is present in Cantua Creek that passes through the Cantua Substation study area; however, the trees themselves are outside the substation study area. The portion of this community in the Cantua Substation study area is relatively open with low shrub and herbaceous cover that in some years appears to be absent, presumably dependent on flow regime. Cantua Creek does not appear to carry surface water year-round. As a result, no suitable nesting habitat for this species is present in the Cantua Substation study area.

Yellow-Headed Blackbird (Xanthocephalus xanthocephalus) – CDFW Species of Special Concern

Yellow-headed blackbird nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds and forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat (Zeiner et al. 1990). Agricultural areas within the Scenario 1, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area provide potentially suitable foraging habitat. No suitable foraging habitat is present in the Los Banos, Midway, or Gates Substations study areas, which are dominated by developed/disturbed land cover. Accounts from eBird document yellow-headed blackbird colonies consisting of 5, 10, and 24 individuals in a roadside "pond" within 5 miles northwest of the Scenario 2 study area. These records were from 2012 and 2016, including a June 2016 observation of nine fledglings. However, no suitable freshwater emergent wetlands are present within the alternative fiber line study areas or in the substation study areas to support nesting. As a result, this species has moderate potential to forage and no potential to nest in the Scenario 1, Scenario 2, and Scenario 3 study areas, and the Cantua Substation study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable foraging and nesting habitat.

Impact Analysis

Based on guidance from CDFW, the impacts to non-listed, non-nesting avian species under CEQA should generally consider factors such as population-level effects, the proportion of the species range affected by the project, regional effects, and impacts to habitat features (CDFW 2024f). Mountain plover, Oregon vesper sparrow, yellow warbler, and yellow-headed blackbird that may forage during migration in the alternative fiber line study areas and the Cantua Substation study area are not expected to be directly impacted by construction or O&M activities as these non-nesting individuals would be able to avoid any sources of disturbance. These species could potentially be directly and indirectly impacted by loss or degradation of foraging habitat resulting from construction, but those impacts would not endanger local or regional populations of these CDFW Species of Special Concern and such impacts would generally be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the three alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to mountain plover, Oregon vesper sparrow, yellow warbler, and yellow-headed blackbird beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, mountain plover has high potential to forage, Oregon vesper sparrow has high potential to winter, yellow warbler has moderate potential to migrate through, and yellow-headed blackbird has moderate potential to forage in the Scenario 1 study area. These highly mobile species do not nest in the region and, therefore, would be able to avoid any sources of disturbance. Potential indirect construction impacts to wintering, migration, or foraging habitat would not endanger local or regional populations. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding and/or minimizing potential construction impacts. Therefore, direct and indirect construction impacts to mountain plover, Oregon vesper sparrow, yellow warbler, and yellow-headed blackbird from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird beyond existing conditions. Therefore, no new O&M impact to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, mountain plover has high potential to forage, Oregon vesper sparrow has high potential to winter, yellow warbler has moderate potential to migrate through, and yellow-headed blackbird has moderate potential to forage in the Scenario 2 study area. These highly mobile species do not nest in the region and, therefore, would be able to avoid any sources of disturbance. Potential indirect construction impacts to wintering, migration, or foraging habitat would not endanger local or regional populations. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding and/or minimizing potential construction impacts. Therefore, potential direct and indirect construction impacts to mountain plover, Oregon vesper sparrow, yellow warbler, and yellow-headed blackbird from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird beyond existing conditions. Therefore, no new O&M impact to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, mountain plover has high potential to forage, Oregon vesper sparrow has high potential to winter, yellow warbler has moderate potential to migrate through, and yellow-headed blackbird has moderate potential to forage in the Scenario 3 study area. These highly mobile species do not nest in the region and, therefore, would be able to avoid any sources of disturbance. Potential indirect construction impacts to wintering, migration, or foraging habitat would not endanger local or regional populations. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding and/or minimizing potential construction impacts. Therefore, potential direct and indirect construction impacts to mountain plover, Oregon vesper

sparrow, yellow warbler, and yellow-headed blackbird from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird beyond existing conditions. Therefore, no new O&M impact to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, mountain plover, Oregon vesper sparrow, yellow warbler, and yellow-headed blackbird occurrences in the Los Banos, Midway, and Gates Substations study areas would be incidental and individuals would be able to avoid direct impacts during construction and O&M. Indirect construction impacts to these species are not expected as suitable breeding, foraging, or wintering habitat is not present in the Los Banos, Midway, or Gates Substations study areas. O&M activities associated with implementing proposed activities at the Los Banos, Midway, or Gates Substations would not increase potential for direct or indirect impacts to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird beyond existing conditions. Therefore, no direct or indirect construction or new O&M impact to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

Mountain plover has high potential to forage, Oregon vesper sparrow has high potential to winter, yellow warbler has moderate potential to migrate through, and yellow-headed blackbird has moderate potential to forage in the portion of the Cantua Substation study area with agricultural land cover. These highly mobile species do not nest in the region and, therefore, would be able to avoid any sources of disturbance. Potential indirect construction impacts to wintering, migration, or foraging habitat would not endanger local or regional populations. The standard PG&E Construction Measures (Appendix F) would also be implemented, further avoiding and/or minimizing potential construction impacts. Therefore, potential direct and indirect construction impacts to mountain plover, Oregon vesper sparrow, yellow warbler, and yellow-headed blackbird from implementation of proposed activities at the Cantua Substation would be less than significant.

O&M activities associated with implementing proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird beyond existing conditions. Therefore, no new O&M impact to mountain plover, Oregon vesper sparrow, yellow warbler, or yellow-headed blackbird would occur as a result of implementing proposed activities at Cantua Substation.

Birds – Non-Listed, Nesting and Foraging Species

Northern Harrier (Circus hudsonius) – CDFW Species of Special Concern

Northern harrier generally inhabits meadows, grasslands, open rangelands, desert sinks, and wetlands. This species nests on the ground in shrubby vegetation, usually at the marsh edge (Brown and Amandon 1968). This species may also nest in emergent wetlands, grasslands, grain fields, sagebrush flats, or along rivers or lakes, and feeds mostly on small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish. Northern harriers are highly territorial and will attack other birds of prey during the breeding season (Zeiner et al. 1988). An adult male northern harrier was documented foraging in the Darden Clean Energy Project PV solar array footprint in April

2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). The species has high potential to forage in the agricultural areas in the alternative fiber line study areas and the Cantua Substation study area, and in the grassland habitats in the Scenario 1 and Scenario 3 study areas.. Grassland areas within the Scenario 1 and Scenario 3 study areas may provide moderately suitable habitat for nesting. The species is not expected to nest in the agricultural areas of the Scenario 1, Scenario 2, or Scenario 3 study areas or the Cantua Substation study area; though grain fields may be present, they are frequently disturbed by agricultural activities during the nesting season. The species is not expected to occur in the developed Los Banos, Midway, or Gates Substations study areas due to the lack of suitable habitat.

California Horned Lark (Eremophila alpestris actia) – CDFW Watch List

California horned lark is a common to abundant resident in a variety of open habitats generally devoid of trees and large shrubs. This subspecies ranges from the inner Coast Ranges and San Joaquin Valley to northern Baja, California. In the San Joaquin Valley, California horned larks inhabit bare ground, deserts, short-grass prairie, tundra, sandy/stony areas, agricultural feed lots, and fallow row crops characterized by open, treeless areas with low vegetation. Nest sites are built on bare ground, often next to tufts of grass or stones. Breeding begins in late February, and pairs may produce two or even three broods in a season (Zeiner et al. 1990). The Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area have suitable agricultural fields for California horned lark foraging and open bare ground for nesting at the margins of agricultural fields and groves. California horned larks were documented within the Darden Clean Energy Project footprint as described in the Opt-In Application (IP Darden I and Rincon 2023). Also, one 1992 CNDDB record resulted from the database query, located at the terminus of a natural gas pipeline in between an agricultural field and scrub and grassland habitat approximately 0.2 mile east of the Scenario 1 study area. As a result, this species has high potential to forage and nest in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas, which lack suitable foraging or nesting habitat.

Loggerhead Shrike (Lanius ludovicianus) – CDFW Species of Special Concern

Loggerhead shrike inhabits open country with scattered trees and shrubs, savannah, desert scrub, and occasionally open woodland with suitable hunting perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. This species occurs only rarely in heavily urbanized areas but is often found in open cropland, and sometimes uses edges of denser habitats. The species is territorial throughout the year, constructing a nest of coarse twigs and animal hair that is typically placed in shrubs or small trees with dense foliage. Throughout California, this species is a common resident and winter visitor in lowlands and foothills (Zeiner et al. 1990). This species is often found in open cropland and was documented foraging in the Darden Clean Energy Project PV solar array footprint in December 2022 and February 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). As a result, there is high potential for the species to forage in agricultural areas of the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. No suitable shrub habitat for nesting is present in the Scenario 2 or Scenario 3 study areas or the substation study areas. However, marginally suitable shrub nesting habitat is present in the atriplex scrub in the Scenario 1 study area where it intersects undeveloped fragments of the Ciervo Hills east of I-5. As a result, this species has low potential to nest in the Scenario 1

study area. This species is not expected to occur in the Los Banos, Midway, and Gates Substations study areas due to the lack of suitable nesting and foraging habitat.

Impact Analysis

If implementation of the Scenario 1 Fiber Line occurs during the nesting bird season (February to September), construction activities have the potential to directly impact nesting northern harrier, California horned lark, and loggerhead shrike through the destruction of nests during vegetation clearing and reduced nesting success. Indirect impacts may occur to nesting habitat or degradation of foraging habitat from invasive plants, fugitive dust, erosion, and runoff. Direct and indirect construction impacts to these species would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction nesting bird surveys and monitoring of active nests by a qualified biologist and/or avoidance buffers; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the three alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to northern harrier, California horned lark, and loggerhead shrike beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, northern harrier, California horned lark, and loggerhead shrike have high potential to forage in the Scenario 1 study area. Northern harrier has moderate potential, California horned lark has high potential, and loggerhead shrike has low potential to nest in the Scenario 1 study area. Potential direct and indirect construction impacts to these species during nesting or foraging would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to northern harrier, California horned lark, and loggerhead shrike from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to northern harrier, California horned lark, and loggerhead shrike beyond existing conditions. Therefore, no new O&M impact to northern harrier, California horned lark, or loggerhead shrike would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, northern harrier, California horned lark, and loggerhead shrike have high potential to forage in the Scenario 2 study area. Northern harrier and loggerhead shrike are not

expected to nest and California horned lark has high potential to nest in the Scenario 2 study area. Potential direct and indirect construction impacts to California horned lark during nesting, and to all three species during foraging, would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to northern harrier, California horned lark, and loggerhead shrike from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to northern harrier, California horned lark, and loggerhead shrike beyond existing conditions. Therefore, no new O&M impact to northern harrier, California horned lark, or loggerhead shrike would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, northern harrier, California horned lark, and loggerhead shrike have high potential to forage in the Scenario 3 study area. Loggerhead shrike is not expected to nest, northern harrier has moderate potential to nest, and California horned lark has high potential to nest in the Scenario 3 study area. Potential direct and indirect construction impacts to northern harrier and California horned lark during nesting, and to all three species during foraging, would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to northern harrier, California horned lark, and loggerhead shrike from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to northern harrier, California horned lark, and loggerhead shrike beyond existing conditions. Therefore, no new O&M impact to northern harrier, California horned lark, or loggerhead shrike would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, northern harrier, California horned lark, and loggerhead shrike have high potential to forage in the portion of Cantua Substation study area with agricultural land cover. Northern harrier and loggerhead shrike are not expected to nest and California horned lark has high potential to nest in the portion of Cantua Substation study area with agricultural land cover. Potential direct and indirect construction impacts to California horned lark during nesting, and to all three species during foraging, would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to northern harrier, California horned lark, and loggerhead shrike from implementation of proposed activities at Cantua Substation would be less than significant.

O&M activities associated with implementing proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to northern harrier, California horned lark, and loggerhead shrike beyond existing conditions. Therefore, no new O&M impact to northern harrier, California horned lark, or loggerhead shrike would occur as a result of implementing proposed activities at Cantua Substation.

As described above, northern harrier, California horned lark, and loggerhead shrike are not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the dominance of developed/disturbed land cover and lack of suitable nesting and foraging habitat. Therefore, no direct or indirect construction or new O&M impact to northern harrier, California horned lark, or

loggerhead shrike would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

Birds – Burrowing CDFW Species of Special Concern

Burrowing Owl (Athene cunicularia) – CDFW Species of Special Concern

Burrowing owl is a grassland specialist dependent on the presence of fossorial mammals, whose burrows are used for nesting and roosting (Klute et al. 2003). The burrowing owl is a yearlong resident of open grasslands, especially prairie, plains, and savanna, and sometimes other open areas such as vacant lots near human habitation or airports. This species spends much time on the ground or on low perches such as fence posts, and nests in abandoned burrows such as those dug by ground squirrels, desert kit foxes, and badgers (Zeiner et al. 1990). During migration and winter, burrowing owls are more widespread in lowland areas of the state and reach offshore islands (Shuford and Gardali 2008). This species is threatened by habitat loss due to agriculture and control of burrowing mammals, such as the eradication of prairie dogs (NatureServe 2024).

This species was documented nesting and foraging in the Darden Clean Energy Project PV solar array footprint (as described in the Opt-In Application [IP Darden I and Rincon 2023). Suitable foraging habitat is present in retired and managed agricultural fields, and breeding habitat is present in areas that are not disked along field edges, roads, drainage berms and open pipes in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. Recent CNDDB records of this species document it nesting on the banks of the California Aqueduct and Coalinga Canal, adjacent to agricultural fields. It may also nest and forage in the grassland and scrubland present in the Scenario 1 and Scenario 3 study areas. As a result, this species has high potential to nest and forage in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable nesting and foraging habitat.

Impact Analysis

If burrowing owls are present in proposed disturbance areas during construction activities, the species may be directly impacted through injury or mortality of individuals resulting from collisions with vehicles or equipment; destruction of occupied burrows and/or active nest sites; and disturbance from increased vehicle traffic, noise at work sites, and human presence that could result in an interruption of normal behaviors or nest abandonment. The species may also be subject to indirect construction impacts due to the loss or degradation of foraging habitat in work areas resulting from vegetation clearing or ground disturbance; soil compaction resulting from construction activities may impede burrow creation by California ground squirrels, on which this species relies.

Direct and indirect construction impacts to burrowing owl would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction surveys within 500 feet of work areas (where accessible) no less than 14 days and no more than 30 days prior to ground disturbing activities; implementation of avoidance buffers or preparation of a Burrowing Owl Exclusion Plan approved by CDFW if required buffers are infeasible consistent with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012); fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread, keeping construction equipment in good working order free of leaks; a

worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the three alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to burrowing owl beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation. In addition, burrowing owl is a covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit for burrowing owl.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, burrowing owl has high potential to nest and forage in the Scenario 1 study area. Potential direct and indirect construction impacts to burrowing owl would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to burrowing owl from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to burrowing owl beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to burrowing owl. Therefore, no new O&M impact to burrowing owl would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, burrowing owl has high potential to nest and forage in the Scenario 2 study area. Potential direct and indirect construction impacts to burrowing owl would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to burrowing owl from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to burrowing owl beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to burrowing owl. Therefore, no new O&M impact to burrowing owl would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, burrowing owl has high potential to nest and forage in the Scenario 3 study area. Potential direct and indirect construction impacts to burrowing owl would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to burrowing owl from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to burrowing owl beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to burrowing owl. Therefore, no new O&M impact to burrowing owl would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, burrowing owl has high potential to nest and forage in the portion of the Cantua Substation study area with agricultural land cover. Potential direct and indirect construction impacts to burrowing owl would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to burrowing owl from implementation of proposed activities at the Cantua Substation would be less than significant.

O&M activities associated with implementing proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to burrowing owl beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to burrowing owl. Therefore, no new O&M impact to burrowing owl would occur as a result of implementing proposed activities at Cantua Substation.

As described above, burrowing owl is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable nesting and foraging habitat. Therefore, no direct or indirect construction or O&M impact to burrowing owl would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

Birds (Passerines) – Federally and State Listed Species

Tricolored Blackbird (Agelaius tricolor) – State Threatened, CDFW Species of Special Concern

Tricolored blackbird requires open, accessible water; a protected nesting substrate including either flooded, thorny, or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony. Colonies also use Himalayan blackberry and thistles and grain fields near dairies (Shuford and Gilardi 2008). Few records, or a single nesting record, exist for winter wheat (*Triticum* spp.) and barley (*Hordeum* spp.); San Joaquin Valley breeding colonies have occurred in fields of triticale, a wheat × rye hybrid grain, especially those infested with Eurasian weeds dominated by mustard (*Brassica* spp.) and mallow (*Malva* spp.) (Beedy et al. 2023). Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, annual grasslands, cattle feedlots, and dairies, wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders (Shuford and Gilardi 2008).

A few parcels along the Scenario 1, Scenario 2, and Scenario 3 study areas contain wheat, corn, onion, and tomato fields. These crops may provide suitable vegetative structure for tricolored blackbird nesting; however, they are not typically considered suitable nesting habitat for the species since they are subject to regular disturbance from agricultural equipment and personnel for maintenance and harvest. As a result, there is a low potential for tricolored blackbird to nest in the Scenario 1, Scenario 2, and Scenario 3 study areas. Potentially suitable foraging habitat for tricolored blackbird exists in the agricultural areas of the Scenario 1, Scenario 2, Scenario 3 study areas, and a portion of the Cantua Substation study area. The species has moderate potential to forage in the Scenario 1, Scenario 2, Scenario 3, and Cantua Substation study areas. Tricolored blackbird is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the dominance of developed/disturbed land cover and the lack of suitable nesting and foraging habitat.

Impact Analysis

In the event that tricolored blackbird is nesting or foraging in the alternative fiber line study areas or the Cantua Substation study area, construction activities have the potential to directly impact nesting or foraging tricolored blackbird through the destruction of nests during vegetation clearing and reduced nesting success. Indirect construction impacts may occur to nesting habitat or foraging habitat from erosion and runoff. Direct and indirect construction impacts to tricolored blackbird would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction nesting bird surveys and monitoring of active nests by a qualified biologist and/or avoidance buffers; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the three alternative scenario fiber lines or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to tricolored blackbird beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, existing transmission routes, and substations. In addition, tricolored blackbird is a covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit for tricolored blackbird.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, tricolored blackbird has low potential to nest and moderate potential to forage in the Scenario 1 study area. Potential direct and indirect construction impacts to tricolored blackbird during nesting or foraging would be avoided and/or minimized through implementation of

the standard PG&E Construction Measures (Appendix F), as described above. With the implementation of these measures, there is no potential for take to occur as a result of implementing the Scenario 1 Fiber Line and direct and indirect construction impacts to tricolored blackbird would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase the potential for direct or indirect impacts to tricolored blackbird beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to tricolored blackbird. Therefore, no new O&M impact to tricolored blackbird would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, tricolored blackbird has low potential to nest and moderate potential to forage in the Scenario 2 study area. Potential direct and indirect construction impacts to tricolored blackbird during nesting or foraging would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. With the implementation of these measures, there is no potential for take to occur as a result of implementing Scenario 2 Fiber Line and direct and indirect construction impacts to tricolored blackbird would be less than significant.

O&M activities associated with implementation of the Scenario 2 Fiber Line would not increase the potential for direct or indirect impacts to tricolored blackbird beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to tricolored blackbird. Therefore, no new O&M impact to tricolored blackbird would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, tricolored blackbird has low potential to nest and moderate potential to forage in the Scenario 3 study area. Potential direct and indirect construction impacts to tricolored blackbird during nesting or foraging would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. With the implementation of these measures, there is no potential for take to occur as a result of implementing Scenario 3 Fiber Line and direct and indirect construction impacts to tricolored blackbird would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase the potential for direct or indirect impacts to tricolored blackbird beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to tricolored blackbird. Therefore, no new O&M impact to tricolored blackbird would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, tricolored blackbird has low potential to nest and moderate potential to forage in the agricultural area of the Cantua Substation study area. Potential direct and indirect construction impacts to tricolored blackbird during nesting or foraging would be avoided and/or

minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. With the implementation of these measures, there is no potential for take to occur as a result of implementing proposed activities at Cantua Substation and direct and indirect construction impacts to tricolored blackbird would be less than significant.

O&M activities associated with implementation of proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to tricolored blackbird beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to tricolored blackbird. Therefore, no new O&M impact to tricolored blackbird would occur as a result of implementing proposed activities at Cantua Substation.

As described above, tricolored blackbird is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the dominance of developed/disturbed land cover and lack of suitable nesting and foraging habitat. Therefore, there is no potential for take to occur and no direct or indirect construction or O&M impact to tricolored blackbird would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

Birds (Raptors) – Federally and State Listed Species

Swainson's Hawk (Buteo swainsoni) – State Threatened

Swainson's hawk occurs in savanna, open pine-oak woodland and cultivated lands. It breeds in grasslands scattered with trees, juniper-sage flats, riparian areas, or agricultural or arch lands with groves or lines of trees. Its habitat requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations (Bloom 1980, Estep 1989). It builds its nests in solitary trees, bushes, or small groves and sometimes on rock ledges. In the Central Valley of California, nests are often within 1 mile of a riparian zone. Its diet is predominantly other vertebrates during its breeding season and it does not feed during most of its migration. The Swainson's hawk was historically threatened by habitat loss (e.g., conversion of foraging and nesting habitat to unsuitable agricultural land use), residential and commercial development and pesticide use (Bloom 1980). However, recent research has documented significant increases in population numbers in the Central Valley of California, particularly in the Sacramento region where nesting habitat is abundant (Gifford et al. 2012, Furnas et al. 2022).

Agricultural fields suitable for Swainson's hawk foraging occur in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. This species was documented nesting in groves and lines of trees adjacent to agricultural fields and also foraging in the Darden Clean Energy Project PV solar array footprint as described in the Opt-In Application (IP Darden I and Rincon 2023). Agricultural areas in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area provide potential suitable foraging habitat for this species. Nesting habitat is absent from the Scenario 1 study area and the Los Banos, Midway, and Gates Substations study areas due to the lack of suitable nest trees. Fremont cottonwoods that could potentially support nesting are present in Cantua Creek adjacent to (but outside of) the Cantua Substation study area and only one or two cottonwood trees are present in Cantua Creek where it intersects the Scenario 2 study area. Potentially suitable riparian nest trees are also present in Los Gatos Creek where it intersects the Scenario 2 and Scenario 3 study areas at the same location.

As a result, this species has high potential to forage in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. It has no potential to nest in the Scenario 1 study

area, moderate potential to nest in riparian trees in Cantua Creek in the Scenario 2 study area and adjacent to the Cantua Substation study area and in Los Gatos Creek in the Scenario 2 and Scenario 3 study areas.. Suitable nesting habitat may also be present in tall trees within 0.25 mile of the three alternative fiber line study areas. The species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging and nesting habitat.

Impact Analysis

If Swainson's hawk are nesting within 0.25 mile of disturbance areas in the Scenario 1, Scenario 2, or Scenario 3 study areas or the Cantua Substation study area during construction or O&M activities, the species may be directly impacted through disturbance from increased vehicle traffic, noise at work sites, and human presence that could result in an interruption of normal behaviors or nest abandonment. Indirect impacts due to the loss or degradation of foraging habitat in work areas in the Scenario 1, Scenario 2, or Scenario 3 study areas or the Cantua Substation study area resulting from vegetation clearing or ground disturbance, or soil compaction that may impede burrow creation by Swainson's hawk prey species, may also occur. No direct or indirect impacts are expected to nesting (within 0.25 mile) or foraging Swainson's at the Los Banos, Midway, or Gates Substations study areas due to developed/disturbed land cover, proposed activities at those locations being limited to facility upgrades, and ongoing activities at those substations.

Impacts to Swainson's hawk foraging habitat would be limited to areas where new permanent structures are being installed within existing distribution and transmission corridors. Since the majority of Project activities will either occur on existing permanent infrastructure or involve temporary disturbance that would be restored following construction, permanent impacts to Swainson's hawk foraging habitat would be negligible and would not reduce the overall abundance of foraging habitat in the San Joaquin Valley; impacts would be less than significant. Direct and indirect construction impacts to Swainson's hawk would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction surveys within 0.5 mile of ground-disturbing activities outside of existing maintenance roads during the Swainson's hawk nesting season (March to June) if construction activities will occur during the species' nesting season; consultation with CDFW to determine if known active Swainson's hawk nests or traditional territories are within 0.5 mile of work areas; preparation of Swainson's hawk nesting construction plan with CDFW to identify monitoring needs and avoidance setbacks; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the three alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to Swainson's hawk beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation. In addition, Swainson's hawk is a covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs)

and with the HCP Implementing Agreement, and associated Federal Permit and State Permit for Swainson's hawk.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, Swainson's hawk has high potential to forage and no potential to nest in the Scenario 1 study area. Though, suitable nesting habitat for Swainson's hawk may be present within 0.25 mile of the Scenario 1 Fiber Line. Potential direct and indirect construction impacts to Swainson's hawk would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to Swainson's hawk from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase the potential for direct or indirect impacts to Swainson's hawk beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to Swainson's hawk. Therefore, no new O&M impact to Swainson's hawk would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, Swainson's hawk has high potential to forage in the Scenario 2 study area, moderate potential to nest in riparian trees in Los Gatos Creek and in riparian trees in Cantua Creek. Suitable nesting habitat for Swainson's hawk may also be present within 0.25 mile of other locations along the Scenario 2 Fiber Line. Potential direct and indirect construction impacts to Swainson's hawk would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to Swainson's hawk from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to Swainson's hawk beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to Swainson's hawk. Therefore, no new O&M impact to Swainson's hawk would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, Swainson's hawk has high potential to forage in the Scenario 3 study area and moderate potential to nest in riparian trees in Los Gatos Creek. Suitable nesting habitat for Swainson's hawk may also be present within 0.25 mile of other locations along the Scenario 3 Fiber Line. Potential direct and indirect construction impacts to Swainson's hawk would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to Swainson's hawk from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to Swainson's hawk beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to Swainson's hawk. Therefore, no new O&M impact to Swainson's hawk would occur as a result of implementing the Scenario 1 Fiber Line.

SUBSTATIONS

As described above, Swainson's hawk has high potential to forage in the Cantua Substation study area and moderate potential to nest in Fremont cottonwood trees adjacent to the Cantua Substation study area. Additional suitable nesting habitat for Swainson's hawk may be present within 0.25 mile of Cantua Substation. Potential direct and indirect construction impacts to nesting or foraging Swainson's hawk would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to Swainson's hawk from implementation of proposed activities at the Cantua Substation would be less than significant.

O&M activities associated with implementation of proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to Swainson's hawk beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to Swainson's hawk. Therefore, no new O&M impact to Swainson's hawk would occur as a result of implementing proposed activities at Cantua Substation.

As described above, Swainson's hawk is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable nesting and foraging habitat. Moreover, proposed activities at the Los Banos, Midway, and Gates Substations are limited to facility upgrades, which, given ongoing activities at those substations, would not significantly increase potential disturbance to nesting or foraging Swainson's hawks within 0.25 mile. Therefore, no direct or indirect construction or O&M impact to Swainson's hawk would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

Small Mammals – Federally and State Listed Species

Nelson's (=San Joaquin) Antelope Squirrel (Ammospermophilus nelsoni) – State Threatened

Nelson's antelope squirrels (also referred to as "San Joaquin antelope squirrel") occur in arid grassland, scrubland, and alkali sink habitats with broken terrain with gullies and washes in the San Joaquin Valley. The San Joaquin antelope squirrel is a ground-dwelling squirrel that occasionally utilizes kangaroo rat burrows as their own. The current range of the species includes the San Joaquin Valley, Cuyama Valley, Panoche Valley, and the Carrizo and Elkhorn plains (CSU Stanislaus 2019).

Potentially suitable scrub and grassland habitat occurs in remnant fragments of the Ciervo Hills east of I-5 where they are intersected by the Scenario 1 study area. Marginally suitable habitat is present in the grassland-dominated areas of the Scenario 3 study area. The majority of CNDDB occurrences in the vicinity of the Scenario 1 and Scenario 3 study areas are historical (greater than 30 years old) and primarily west of I-5 in the Ciervo Hills west of the Scenario 1 study area. One 2017 CNDDB record is located on the north side of Arroyo Hondo in the Ciervo Hills west of I-5 and approximately

2.15 miles west of the Scenario 1 study area. As a result, this species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas scrub and grassland habitats. No suitable shrub, forb, or grassland habitat is present in the Scenario 2 study area or in the substation study areas; as a result, the species is not expected to occur in the Scenario 2 study area or substation study areas.

Giant kangaroo rat (Dipodomys ingens) – Federally Endangered, State Endangered

Giant kangaroo rat occur in annual grasslands and occasionally alkali scrub generally along the western edge of the San Joaquin Valley from Fresno County in the north to Kern County in the south and the Carrizo Plain and Cuyama Valley in San Luis Obispo County. The species prefers areas with sparse cover and can be found in areas of cattle grazing. It requires level or slightly sloping terrain and friable soils for burrowing.

Marginally suitable annual grassland and scrub habitat occur within the Scenario 1 and Scenario 3 study areas where they intersect the remnant portions of the Ciervo Hills east of I-5 and undeveloped Big Blue Hills west of I-5. The portion of the Scenario 3 study area that includes grassland habitat in the Big Blue Hills and Ciervo Hills generally has high topographic relief and dense annual grassland vegetation with few shrubs for cover. However, the Scenario 3 study area includes a dirt access road along the transmission corridor and also intersects areas showing signs of past cattle crazing, which may have created marginally suitable sparsely vegetated areas. As a result, this species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas. The Scenario 2 study area and substation study areas are dominated by agricultural and/or developed/disturbed land covers, which are regularly disked or maintained and do not offer suitable scrub or grassland habitats. As a result, the species is not expected to occur in the Scenario 2 study area or substation study areas. No recent occurrences of this species have been documented within 10 miles of the alternative fiber line study areas or substation study areas. The majority of CNDDB occurrences are historical (more than 30 years old) from the Ciervo Hills west of I-5 and west of the Scenario 1 study area; I-5 likely acts as a barrier to movement of any giant kangaroo rat that may still occur in the Ciervo Hills.

Impact Analysis

If San Joaquin antelope squirrels or giant kangaroo rats are present in work areas or on access roads in the Scenario 1 or Scenario 3 study areas during construction or O&M activities, there is potential for direct impacts including injury or death resulting from vehicle collision, damage or destruction of occupied burrows, disturbance from construction noise/vibration, entrapment of individuals in excavation areas, and loss or degradation of foraging habitat. San Joaquin antelope squirrels and giant kangaroo rats may be indirectly impacted if construction or O&M activities in the Scenario 1 or Scenario 3 study areas disrupt their movement, but such impacts would be temporary and minor. Human-caused food subsidies may attract mice to disturbance areas during construction or O&M. Indirect impacts could also include degradation of habitat due to spread of invasive plants, fugitive dust, erosion, sedimentation, and runoff of hazardous materials.

Direct and indirect construction impacts to San Joaquin antelope squirrel and giant kangaroo rat would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction surveys by a qualified biologist within 30 days prior to the start of ground disturbance to determine presence and occupancy status of potential burrows; if present, preparation of a plan to address potential impacts to San Joaquin antelope squirrel to be approved by the CDFW; establishment of a minimum 50-foot no disturbance buffer around identified burrows or consultation with CDFW to consider alternative take avoidance measures

and/or acquisition of take authorization; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread, keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the Scenario 1 or Scenario 3 Fiber Lines would occur on existing distribution structures and within existing transmission routes. As a result, O&M activities associated with implementation of the Scenario 1 Fiber Line or Scenario 3 Fiber Line would not increase the potential for direct or indirect impacts to San Joaquin antelope squirrel or giant kangaroo rat beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures and transmission routes. In addition, San Joaquin antelope squirrel and giant kangaroo rat are covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit for San Joaquin antelope squirrel and giant kangaroo rat.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, San Joaquin antelope squirrel and giant kangaroo rat have moderate potential to occur in the scrub and grassland habitat present in the Scenario 1 study area. Potential direct and indirect construction impacts to San Joaquin antelope squirrel and giant kangaroo rat would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin antelope squirrel and giant kangaroo rat from implementation of Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin antelope squirrel or giant kangaroo rat beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to San Joaquin antelope squirrel and giant kangaroo rat. Therefore, no new O&M impact to San Joaquin antelope squirrel or giant kangaroo rat would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, San Joaquin antelope squirrel and giant kangaroo rat are not expected to occur in the Scenario 2 study area due to the lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to San Joaquin antelope squirrel or giant kangaroo rat would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, San Joaquin antelope squirrel and giant kangaroo rat have moderate potential to occur in the grassland habitat present in the Scenario 3 study area. Potential direct and indirect

construction impacts to San Joaquin antelope squirrel and giant kangaroo rat would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin antelope squirrel and giant kangaroo rat from implementation of Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin antelope squirrel or giant kangaroo rat beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to San Joaquin antelope squirrel and giant kangaroo rat. Therefore, no new O&M impact to San Joaquin antelope squirrel or giant kangaroo rat would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, San Joaquin antelope squirrel and giant kangaroo rat are not expected to occur in the substation study areas due to the lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to San Joaquin antelope squirrel or giant kangaroo rat would occur as a result of implementing proposed activities at the substations.

Small Mammals – CDFW Species of Special Concern

Short-Nosed Kangaroo Rat (Dipodomys nitratoides brevinasus) – CDFW Species of Special Concern

Short-nosed kangaroo rat is nocturnal and active year-round and occurs along the western side of the San Joaquin Valley in grasslands with scattered shrubs and desert-shrub associations on powdery soils. The species favors flat to gently sloping terrain. Potentially suitable scrub habitat for short-nosed kangaroo rat occurs in remnant fragments of the Ciervo Hills east of I-5 where they are intersected by the Scenario 1 study area. Marginally suitable habitat is present in the grassland dominated areas of the Scenario 3 study area. As a result, this species has moderate potential to occur in the Scenario 1 study area and low potential to occur in the Scenario 3 study area in the scrub and grassland habitats. No suitable scrub or grassland habitat is present in the Scenario 2 study area or in the substation study areas; as a result, the species is not expected to occur in the Scenario 2 study area or substation study areas. All six CNDDB occurrences resulting from the database query date from before 2000 and are located south of California State Route 198; the most recent is from 1999 approximately 4.4 miles west of the Scenario 3 study area on the west side of I-5.

Tulare Grasshopper Mouse (Onychomys torridus tularensis) – CDFW Species of Special Concern

Tulare grasshopper mouse occurs in hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Its diet consists almost exclusively of arthropods and therefore needs an abundant supply of insects. Potentially suitable scrub habitat occurs in the Scenario 1 study area where it intersects remnant fragments of the Ciervo Hills on the east side of I-5. This species was most recently recorded in the CNDDB in 2019 approximately 0.4 mile southwest of the Scenario 1 study area; the record is located along the west side of I-5, which likely acts as a barrier to significant wildlife movement. As a result, the species has moderate potential to occur in the Scenario 1 study area.

This species has low potential to occur in the Scenario 3 study area, which is dominated by annual grassland. It is not expected to occur in the Scenario 2 study area or in the substation study areas, which are dominated by agriculture and developed/disturbed land cover.

Impact Analysis

If short-nosed kangaroo rats or Tulare grasshopper mice are present in work areas or on access roads in the Scenario 1 or Scenario 3 study areas during construction or O&M activities, there is potential for direct impacts including injury or death resulting from vehicle collision, damage or destruction of occupied burrows, disturbance from construction noise/vibration, entrapment of individuals in excavation areas, and loss or degradation of foraging habitat. Short-nosed kangaroo rats and Tulare grasshopper mice may be indirectly impacted if construction or O&M activities in the Scenario 1 or Scenario 3 study areas disrupts their movement, but such impacts would be temporary and minor. Human-caused food subsidies may attract mice to disturbance areas during construction and O&M. Indirect impacts could also include degradation of habitat due to spread of invasive plants, fugitive dust, erosion, sedimentation, and runoff of hazardous materials.

Based on guidance from CDFW, the impacts to non-listed species under CEQA should generally consider factors such as population-level effects, the proportion of the species range affected by the project, regional effects, and impacts to habitat features (CDFW 2024f). Potential construction and O&M impacts to these CDFW Species of Special Concern small mammals may affect a few individuals. Direct and indirect construction impacts to the regional populations would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction surveys by a qualified biologist within 30 days prior to the start of ground disturbance to determine the presence and occupancy status of burrows; if present, preparation of a plan to address potential impacts to be approved by CDFW; establishment of a 50-foot no disturbance buffer around active Tulare grasshopper mouse burrows; fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread, keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the Scenario 1 or Scenario 3 Fiber Lines would occur on existing distribution structures and within existing transmission routes. As a result, O&M activities associated with implementation of the Scenario 1 Fiber Line or Scenario 3 Fiber Line would not increase the potential for direct or indirect impacts to short-nosed kangaroo rat or Tulare grasshopper mouse beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures and transmission routes.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, short-nosed kangaroo rat and Tulare grasshopper mouse have moderate potential to occur in the Scenario 1 study area. Potential direct and indirect construction impacts to these species would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect

construction impacts to short-nosed kangaroo rat and Tulare grasshopper mouse from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to short-nosed kangaroo rat or Tulare grasshopper mouse beyond existing conditions. Therefore, no new O&M impact to short-nosed kangaroo rat or Tulare grasshopper mouse would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, short-nosed kangaroo rat and Tulare grasshopper mouse are not expected to occur in the Scenario 2 study area due to the dominance of agricultural land cover and lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to short-nosed kangaroo rat and Tulare grasshopper mouse would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, short-nosed kangaroo rat and Tulare grasshopper mouse have low potential to occur in the Scenario 3 study area. Potential direct and indirect construction impacts to these species would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to short-nosed kangaroo rat and Tulare grasshopper mouse from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to short-nosed kangaroo rat or Tulare grasshopper mouse beyond existing conditions. Therefore, no new O&M impact to short-nosed kangaroo rat or Tulare grasshopper mouse would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, short-nosed kangaroo rat and Tulare grasshopper mouse are not expected to occur in the substation study areas due to the dominance of developed/disturbed and agricultural land cover and lack of suitable habitat. Therefore, no direct or indirect construction or O&M impact to short-nosed kangaroo rat and Tulare grasshopper mouse would occur as a result of implementing proposed activities at the substations.

Mammals – CDFW Species of Special Concern

American Badger (Taxidea taxus) – CDFW Species of Special Concern

American badger inhabits drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Cropland, desert, grassland, savanna, and shrubland/chaparral are preferred habitat types for the American badger. The species is chiefly nocturnal, mostly solitary, and feeds primarily on small rodents that are captured by digging out the rodent burrows. American badgers are an uncommon, permanent resident throughout most of California, except in the northern North Coast area (Zeiner et al. 1990). Threats to the species include habitat loss, collisions with vehicles, and direct persecution (NatureServe 2024).

The Scenario 1, Scenario 2, and Scenario 3 study areas and a portion of the Cantua Substation study area contain suitable friable soils and presence of suitable prey species in the areas dominated by

agriculture. This species' oblong burrows with characteristic claw marks were observed in the Darden Clean Energy Project PV solar array footprint in December 2022, as described in the Opt-In Application (IP Darden I and Rincon 2023). As a result, American badger has high potential to occur in the agricultural areas of the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area, particularly along road and field edges with friable soils. The species has moderate potential to occur in the grassland and scrub habitats of the Scenario 1 and Scenario 3 study areas. This species is not expected to occur in the Los Banos, Midway, and Gates Substations study areas due to lack of suitable habitat.

Impact Analysis

If American badgers are present in work areas or on access roads in the Scenario 1, Scenario 2, or Scenario 3 study areas or the Cantua Substation study area during construction or O&M activities, there is potential for direct impacts including injury or death resulting from vehicle collision, damage or destruction of occupied burrows, disturbance from construction noise/vibration, entrapment of individuals in excavation areas, and loss or degradation of foraging habitat. American badgers may be indirectly impacted if construction or O&M activities in the Scenario 1, Scenario 2, or Scenario 3 study areas or the Cantua Substation study area disrupts their movement, but such impacts would be temporary and minor. Human-caused food subsidies may attract mice to disturbance areas during construction and O&M. Indirect impacts could also include degradation of habitat due to spread of invasive plants, fugitive dust, erosion, sedimentation, and runoff of hazardous materials.

Potential direct and indirect construction impacts to American badgers would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction surveys within 500 feet of work areas (where accessible) no less than 14 days and no more than 30 days prior to ground disturbing activities; implementation of 50-foot avoidance buffer around potential or atypical dens, 100-foot avoidance buffer around known dens, and 500-foot avoidance buffers around natal or pupping dens (unless otherwise specified by CDFW); fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread, keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to American badger beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, American badger has high potential to occur in the agricultural areas and moderate potential to occur in the grassland and scrub habitats of the Scenario 1 study area. Potential direct and indirect construction impacts to American badger would be avoided and/or

minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to American badger from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to American badger beyond existing conditions. Therefore, no new O&M impact to American badger would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, American badger has high potential to occur in the agricultural areas of the Scenario 2 study area. Potential direct and indirect construction impacts to American badger would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to American badger from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to American badger beyond existing conditions. Therefore, no new O&M impact to American badger would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, American badger has high potential to occur in the agricultural areas and moderate potential to occur in the grassland habitats of the Scenario 3 study area. Potential direct and indirect construction impacts to American badger would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to American badger from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to American badger beyond existing conditions. Therefore, no new O&M impact to American badger would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, American badger has high potential to occur in the agricultural areas of the Cantua Substation study area. Potential direct and indirect construction impacts to American badger at the Cantua Substation study area would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to American badger from implementation of proposed activities at Cantua Substation would be less than significant.

O&M activities associated with implementation of proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to American badger beyond existing conditions. Therefore, no new O&M impact to American badger would occur as a result of implementing proposed activities at Cantua Substation.

The species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the dominance of disturbed/developed land cover. Therefore, no direct or indirect construction or O&M impact to American badger would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

Mammals – Federally and State Listed Species

San Joaquin Kit Fox (Vulpes macrotis mutica) – Federally Endangered, State Threatened

San Joaquin kit foxes inhabit the San Joaquin Valley and associated foothills, and flatlands such as the Carrizo Plain and Panoche Valley (USFWS 2020). Habitat includes alkali sink, valley grassland, and woodland, in valleys and adjacent gentle foothills (USFWS 2010). San Joaquin kit fox hunt in areas with low sparse vegetation that allows good visibility and mobility (McGrew et al. 1979). Multiple underground dens in dry soils are used throughout the year. Sometimes these foxes use pipes or culverts as den sites (McGrew et al. 1979). Young are born in underground dens, and natal dens typically have multiple entrances.

Friable soils in potentially suitable chenopod scrub are present in the Scenario 1 study area, and in potentially suitable grassland habitat in the Scenario 1 and Scenario 3 study areas. The majority of the CNDDB records resulting from the database query near the Scenario 1 and Scenario 3 study areas are from the 1970s and 1980s. As a result, this species has moderate potential to occur in the scrub and grassland habitats and low potential to occur in the agricultural areas in the Scenario 1 and Scenario 3 study areas. It has low potential to occur in the Scenario 2 study area, which is dominated almost exclusively by agriculture, and the portion of the Cantua Substation study area with agriculture. The species may transit through agricultural areas of the Scenario 1, Scenario 2, and Scenario 3 study areas occasionally, but is not expected to den. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due the dominance of developed land cover and the lack of suitable denning or foraging habitat.

Impact Analysis

If San Joaquin kit foxes are present in Scenario 1, Scenario 2, Scenario 3, or Cantua Substation work areas or on access roads during construction or O&M activities, there is potential for direct impacts including injury or death resulting from vehicle collision damage or destruction of occupied burrows, disturbance from construction noise/vibration, entrapment of individuals in excavation areas, and loss or degradation of foraging habitat. Human-caused food and water subsidies may attract San Joaquin kit foxes to work areas during Project construction, putting individuals at risk of direct impacts. San Joaquin kit foxes may be indirectly impacted if construction or O&M activities in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area disrupts their movement, but such impacts would be temporary and minor.

Potential direct and indirect construction impacts to San Joaquin kit foxes would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require within 500 feet of work areas (where accessible) no less than 14 days and no more than 30 days prior to ground disturbing activities; implementation of 50-foot avoidance buffer around potential or atypical dens, 100-foot avoidance buffer around known dens, and 500-foot avoidance buffers around natal or pupping dens (unless otherwise specified by CDFW); encroachment into buffers at the discretion of the qualified biologist as specified in the standard PG&E Construction Measure for San Joaquin kit fox (Appendix F); if required buffers are not possible to protect the species,

consultation with CDFW to consider alternative take avoidance measures and/or acquisition of take authorization; fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread, keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. As a result, O&M activities associated with implementation of the alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to San Joaquin kit fox beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation. In addition, San Joaquin kit fox is a covered species in the PG&E San Joaquin Valley O&M HCP; as a result, O&M activities would be conducted in compliance with HCP requirements (including applicable AMMs) and with the HCP Implementing Agreement, and associated Federal Permit and State Permit for San Joaquin kit fox.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, San Joaquin kit fox has moderate potential to occur in the scrub and grassland habitats and low potential to transit through the agricultural areas of the Scenario 1 study area. Potential direct and indirect construction impacts to San Joaquin kit fox would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin kit fox from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin kit fox beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to San Joaquin kit fox. Therefore, no new O&M impact to San Joaquin kit fox would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, San Joaquin kit fox has low potential to occur in the Scenario 2 study area, which is dominated almost exclusively by agriculture. It may transit through agricultural areas, but is not expected to den. Potential direct and indirect construction impacts to San Joaquin kit fox would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no direct construction impacts would occur to San Joaquin kit fox from implementation of the Scenario 2 Fiber Line and potential indirect construction impacts to San Joaquin kit fox from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin kit fox beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to San Joaquin kit fox. Therefore, no new O&M impact to San Joaquin kit fox would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, San Joaquin kit fox has moderate potential to occur in the grassland habitats and low potential to transit through the agricultural areas of the Scenario 3 study area. Potential direct and indirect construction impacts to San Joaquin kit fox would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to San Joaquin kit fox from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to San Joaquin kit fox beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to San Joaquin kit fox. Therefore, no new O&M impact to San Joaquin kit fox would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, San Joaquin kit fox has low potential to occur in the agricultural areas of the Cantua Substation study area. It may transit through this agricultural area, but is not expected to den. Potential direct and indirect construction impacts to San Joaquin kit fox would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no direct construction impacts would occur to San Joaquin kit fox from implementation of proposed activities at Cantua Substation and potential indirect construction impacts to San Joaquin kit fox from implementation of proposed activities at Cantua Substation would be less than significant.

O&M activities associated with implementing proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to San Joaquin kit fox beyond existing conditions. In addition, O&M activities would be conducted as part of the overall PG&E O&M Program in the San Joaquin Valley in compliance with the PG&E San Joaquin Valley O&M HCP requirements applicable to San Joaquin kit fox. Therefore, no new O&M impact to San Joaquin kit fox would occur as a result of implementing proposed activities at Cantua Substation.

The species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the dominance of disturbed/developed land cover. Therefore, no direct or indirect construction or O&M impact to San Joaquin kit fox would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

4.1.3 Nesting Birds Protected by the CFGC and MBTA

Common bird species were observed throughout and adjacent to the alternative fiber line study areas and substation study areas during the field reconnaissance surveys, including many species that occur as residents and breed in the Central Valley. Native birds protected by the CFGC and the

MBTA could potentially nest in the three alternative fiber line study areas and substation study areas.

Impact Analysis

If implementation of any of the alternative fiber line scenarios or proposed activities at the substations occurs during the nesting bird season (February to September), construction and O&M activities have the potential to directly impact nesting birds through the destruction of nests during vegetation clearing and reduced nesting success; or indirectly through impacts to nesting habitat or degradation of foraging habitat from invasive plants, fugitive dust, erosion, and runoff. Direct and indirect construction impacts to nesting birds protected under the CFGC and MBTA would be avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require pre-construction nesting bird surveys and monitoring of active nests by a qualified biologist and/or avoidance buffers; fugitive dust control to minimize dust drift into adjacent areas; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at the substations would occur on existing distribution structures and within existing transmission routes and substations. As a result, O&M activities associated with implementation of the alternative fiber line scenarios or proposed activities at the substations would not increase the potential for direct or indirect impacts to nesting birds protected under the CFGC and the MBTA beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substations.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, native birds protected by the CFGC and the MBTA could potentially nest in the Scenario 1 study area. Potential direct and indirect construction impacts to nesting birds would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to nesting birds protected by the CFGC and MBTA from implementation of the Scenario 1 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to nesting birds protected by the CFGC and the MBTA beyond existing conditions. Therefore, no new O&M impact to nesting birds protected by the CFGC and MBTA would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, native birds protected by the CFGC and the MBTA could potentially nest in the Scenario 2 study area. Potential direct and indirect construction impacts to nesting birds would be

avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to nesting birds protected by the CFGC and MBTA from implementation of the Scenario 2 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to nesting birds protected by the CFGC and the MBTA beyond existing conditions. Therefore, no new O&M impact to nesting birds protected by the CFGC and MBTA would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, native birds protected by the CFGC and the MBTA could potentially nest in the Scenario 3 study area. Potential direct and indirect construction impacts to nesting birds would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential construction impacts to nesting birds protected by the CFGC and MBTA from implementation of the Scenario 3 Fiber Line would be less than significant.

O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to nesting birds protected by the CFGC and the MBTA beyond existing conditions. Therefore, no new O&M impact to nesting birds protected by the CFGC and MBTA would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, native birds protected by the CFGC and the MBTA could potentially nest in the substation study areas. Potential direct and indirect construction impacts to nesting birds would be avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, potential direct and indirect construction impacts to nesting birds protected by the CFGC and MBTA from implementation of proposed activities at the substations would be less than significant.

O&M activities associated with implementing proposed activities at the substations would not increase potential for direct or indirect impacts to nesting birds protected by the CFGC and the MBTA beyond existing conditions. Therefore, no new O&M impact to nesting birds protected by the CFGC and MBTA would occur as a result of implementing proposed activities at the substations.

4.2 Sensitive Natural Communities and Critical Habitat

Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. Vegetation rarity ranking is based on a rank calculator developed by NatureServe (2024). According to the CDFW Vegetation Program, alliances with State ranks of S1-S3, as well as certain additional associations specifically noted as sensitive in the list, are considered to be imperiled, and thus, potentially of special concern.

Fremont cottonwood woodland is present in Cantua Creek where it passes through the western and southern portions of the Cantua Substation study area, but is outside of the proposed substation work area footprint. The individual cottonwood trees are outside the Cantua Substation study area boundary, but define the vegetation community in Cantua Creek adjacent to Cantua Substation. This

vegetation community has a sensitivity ranking of G2Q/S3 and is considered a sensitive natural community by CDFW (2023a). No other sensitive natural communities are present in the alternative fiber line study areas or the Los Banos, Midway, or Gates Substations study areas.

USFWS-designated Critical Habitat (USFWS 2024c) does not occur within the alternative fiber line study areas or the substation study areas.

Impact Analysis

If the Cantua Substation microwave path option is selected, a new microwave tower would be installed either within the fence line of the existing substation or within 50 feet north or 50 feet west of the existing substation fence line. Installation of and work areas for the microwave tower would be located outside of Cantua Creek and the Fremont cottonwood woodland associated with Cantua Creek; therefore, direct construction impacts would be avoided. Potential indirect construction impacts to Fremont cottonwood woodland adjacent to Cantua Substation would be avoided and/or minimized through fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; implementation of a Storm Water Pollution Prevention Plan and implementation of stormwater BMPs to prevent construction-related erosion and sediments from entering Cantua Creek and the woodland; and restoration of temporary impact areas to pre-disturbance conditions in accordance with the standard PG&E Construction Measures (Appendix F).

Implementation of proposed O&M activities at Cantua Substation would occur in developed/disturbed areas, outside of Cantua Creek and the Fremont cottonwood woodland. As a result, O&M activities associated with implementation of proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to Cantua Creek or the Fremont cottonwood woodland beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for the substation.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, sensitive natural communities and USFWS-designated Critical Habitat do not occur within the Scenario 1 study area. Therefore, no direct or indirect construction or O&M impact to sensitive natural communities or USFWS-designated critical habitat would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, sensitive natural communities and USFWS-designated Critical Habitat do not occur within the Scenario 2 study area. Therefore, no direct or indirect construction or O&M impact to sensitive natural communities or USFWS-designated critical habitat would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, sensitive natural communities and USFWS-designated Critical Habitat do not occur within the Scenario 3 study area. Therefore, no direct or indirect construction or O&M impact

to sensitive natural communities or USFWS-designated critical habitat would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, Fremont cottonwood woodland is present in Cantua Creek where it passes through the southern and western portions of the Cantua Substation study area, but is outside of the proposed substation work area footprint. Potential direct construction impacts to Fremont Cottonwood woodland would be avoided by locating the proposed microwave tower and proposed work areas outside of Cantua Creek and the Fremont cottonwood woodland associated with Cantua Creek. Potential indirect construction impacts to Fremont cottonwood woodland adjacent to Cantua Substation would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. O&M activities associated with implementation of proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to Cantua Creek or the Fremont cottonwood woodland beyond existing conditions. Therefore, no potential direct or indirect construction or new O&M impacts to Fremont cottonwood woodland would occur as a result of implementing proposed activities at Cantua Substation.

USFWS-designated Critical Habitat does not occur within the Cantua Substation study area. Therefore, no direct or indirect construction or O&M impact to sensitive USFWS-designated critical habitat would occur as a result of implementing proposed activities at Cantua Substation.

As described above, sensitive natural communities and USFWS-designated Critical Habitat do not occur within the Los Banos, Midway, or Gates Substation study areas. Therefore, no direct or indirect construction or O&M impact to sensitive natural communities or USFWS-designated critical habitat would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

4.3 Jurisdictional Waters and Wetlands

Manmade Agricultural Ditches, Canals, and Basins

The alternative fiber line study areas intersect multiple manmade ditches, canals, and excavated basins. The owners and tenants of the agricultural lands where they occur actively reconfigure drainages by filling and reconstructing irrigation ditches, canals, and basins as needed to support agricultural operations. This includes minor ditches such as v-ditches created to hold irrigation piping or formed during road grading..

Aside from those discussed below, the remaining features have been determined to be either not jurisdictional or exempt from permitting procedures for the below-listed agencies under the following criteria:

- **USACE:** The manmade ditches, canals, and excavated basins intersecting the Scenario 1, Scenario 2, and Scenario 3 study areas, and/or adjacent to existing PG&E substations are part of an isolated system of interconnected ditches and basins, which were constructed from uplands and do not support a relatively permanent flow of surface water. Basins that may meet the definition of wetlands are isolated. Based on current USACE regulations, consistent with the recent *Sackett vs. Environmental Protection Agency* United States Supreme Court Case, these features are not federally jurisdictional.
- **RWQCB:** Manmade irrigation basins are not considered wetland waters of the State by definition in Section II.3 and II.3.d.v. of the *State Wetland Definition and Procedures for*

Discharges of Dredged or Fill Material to Waters of the State (the Procedures; State Water Resources Control Board [SWRCB] 2021) because they are manmade ("artificial") features that are less than one acre in size and/or constructed and maintained for agricultural crop irrigation or stock watering. The ditches are not subject to the Procedures pursuant to Section IV.D.2.c of the Procedures which exempts agricultural ditches in most cases. This exemption does not limit the SWRCB's authority to regulate discharges to the ditches under the Porter Cologne Water Quality Control Act; however, no discharge into these features is proposed as part of implementing the alternative fiber line scenarios or proposed activities at the substations. If discharges were proposed, they would potentially be subject to the SWRCB's permitting authority but would not require compliance with the Procedures.

- **CDFW:** The ditches and canals are manmade and have not acquired the characteristics of natural waterways and do not meet the requirements to be considered jurisdictional by the CDFW (CDFG 1988).

Ephemeral Drainages Assessed During Field Reconnaissance Survey and Coalinga Canal

- **Los Gatos Creek** is an ephemeral aquatic feature that intersects the Scenario 2 and Scenario 3 study areas approximately 3.2 miles north of Gates Substation. This creek is depicted in the NWI as intermittent riverine and the NHD as intermittent wash (Appendix A, Figure 4j). A preliminary assessment suggests this feature may be subject to CDFW and RWQCB jurisdiction as a streambed and water of the State. Los Gatos Creek originates in the Big Blue Hills and ends on the San Joaquin Valley floor in the agricultural areas west of the California Aqueduct. Because it is isolated, lacking connection to any traditionally navigable waters or their tributaries, the creek is considered non-jurisdictional to the USACE.
- **Domengine Creek** is an ephemeral aquatic feature that intersects the Scenario 2 and Scenario 3 study areas approximately 7 miles southeast of the utility switchyard (Appendix A, Figure 6). A preliminary assessment suggests this feature may be subject to CDFW and RWQCB jurisdiction as a streambed and water of the State. Domengine Creek originates in the Big Blue Hills and ends on the San Joaquin Valley floor in the agricultural areas west of the California Aqueduct. Because it is isolated, lacking connection to any traditionally navigable waters or their tributaries, the creek is considered non-jurisdictional to the USACE.
- **Martinez Creek** is an ephemeral aquatic feature that intersects the Scenario 3 study area approximately 14.8 miles north of Gates Substation (Appendix A, Figure 4f). A preliminary assessment suggests this feature may be subject to CDFW and RWQCB jurisdiction. Martinez Creek originates in the Big Blue Hills and ends on the San Joaquin Valley floor in the agricultural areas west of the California Aqueduct. Because it is isolated, lacking connection to any traditionally navigable waters or their tributaries, the creek is considered non-jurisdictional to the USACE.
- **Salt Creek** is an ephemeral aquatic feature that intersects the Scenario 2 and Scenario 3 study areas approximately 3.4 miles and 2.5 miles southeast of the utility switchyard, respectively. This feature is depicted in the NWI as intermittent riverine and the NHD as intermittent wash where it intersects Scenario 3 study area, and as a canal ditch per the NHD where it intersects the Scenario 2 study area (Appendix A, Figure 4e). A preliminary assessment suggests this feature may be subject to CDFW and RWQCB jurisdiction. Salt Creek originates in the Big Blue Hills and ends on the San Joaquin Valley floor in the agricultural areas west of the California

Aqueduct. Because it is isolated, lacking connection to any traditionally navigable waters or their tributaries, the creek is considered non-jurisdictional to the USACE.

- **Cantua Creek** is an ephemeral aquatic feature that intersects the Scenario 2 and Scenario 3 study areas approximately 1.5 miles east and 0.9 mile southeast of the utility switchyard, respectively. The creek also intersects the Cantua Substation study area as it flows by and outside of the proposed substation work area footprint. This feature is depicted in the NWI as an intermittent riverine and the NHD as an intermittent wash where it intersects these study areas (Appendix A, Figure 4e and Figure 4d). A preliminary assessment suggests this feature may be subject to CDFW and RWQCB jurisdiction. Cantua Creek originates in the Ciervo Hills and ends on the San Joaquin Valley floor in the agricultural areas west of the California Aqueduct. Because it is isolated, lacking connection to any traditionally navigable waters or their tributaries, the creek is considered non-jurisdictional to the USACE.
- **Two (2) unnamed drainages** intersect the alternative fiber line study areas: Unnamed Drainage #1 intersects the Scenario 2 and Scenario 3 study areas approximately 15 miles northwest of the Gates Substation; Unnamed Drainage #2 intersects the Scenario 1 study area approximately 5 miles northwest of the utility switchyard (Appendix A, Figure 4c and Figure 4g). A preliminary assessment suggests these features may be subject to CDFW and RWQCB jurisdiction. The two unnamed drainages originate in the Ciervo Hills and Big Blue Hills and end on the San Joaquin Valley floor in the agricultural areas west of the California Aqueduct. Because they are isolated, lacking connection to any traditionally navigable waters or their tributaries, they are considered non-jurisdictional to the USACE.
- **Coalinga Canal** is the southern terminus of raw water from the Sacramento-San Joaquin Delta that is destined for the city of Coalinga. It is carried south from the Delta in either the Delta-Mendota Canal or the Central Valley Project California Aqueduct to the O'Neil Forebay, then further south in the California Aqueduct to the start of the Coalinga Canal, approximately 15 miles northeast of the city of Coalinga where Highway 145 crosses over the California Aqueduct. After leaving the California Aqueduct, the water is carried in the Coalinga Canal approximately 12 miles south to the City of Coalinga water treatment plant intake. The water is then lifted by a raw water pump station to the City's water treatment plant. The Coalinga Canal intersects the Scenario 2 study area as an underground pipeline and the Scenario 3 study area as a concrete-lined surface water canal approximately 12 and 13 miles southeast of the utility switchyard, respectively (Appendix A, Figure 4g and Figure 4h). The Coalinga Canal is an aquatic resource that is potentially jurisdictional to the USACE, RWQCB, and CDFW, as it is a relatively permanent stream connected to the Sacramento-San Joaquin Delta that may provide habitat to animals.

Additional NWI- and NHD-Mapped Features

Additional NWI-mapped intermittent riverine features and NHD-mapped features intersect the Scenario 1, Scenario 2, and Scenario 3 study areas, but could not be assessed during the field reconnaissance survey due to limited access (Appendix A, Figure 4). It is noted that mapping presented in the NWI and NHD provide useful context but are not a completely accurate depiction of current existing conditions nor of the extent of jurisdiction in the alternative fiber line study areas. Based on desktop review, these features may potentially be subject to CDFW and RWQCB jurisdiction, which could be confirmed by additional field surveys. These features originate in the Ciervo Hills and Big Blue Hills and end on the San Joaquin Valley floor in the agricultural areas west of the California Aqueduct. Because they are isolated, lacking connection to any traditionally navigable waters or their tributaries, they are considered non-jurisdictional to the USACE.

Impact Analysis

The Scenario 1, Scenario 2, or Scenario 3 alternatives would be implemented within existing PG&E transmission corridors, within the fence lines of the Los Banos, Midway, and Gates Substations, and within the proposed work area footprint of Cantua Substation located in developed/disturbed and agricultural land covers. For Scenario 1 and Scenario 2, the fiber line would be installed on existing distribution structures. For Scenario 3, the fiber line would be installed either underground, overhead on a dedicated pole line, or a mixture of the two. Potential direct construction impacts to potentially jurisdictional waters intersecting the alternative fiber line study areas and Cantua Substation study area would be avoided through installation of fiber line on existing structures, work area siting outside of these features (including HLZs), and use of trenchless technology for underground fiber line installation at crossings (for Scenario 3). Potential indirect construction impacts to potentially jurisdictional waters intersecting the alternative fiber line study areas and Cantua substation study area would be avoided through fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; no vehicles or heavy equipment refueled within 100 feet of a wetland, stream, or other waterway; implementation of a Storm Water Pollution Prevention Plan and stormwater BMPs to prevent construction-related erosion and sediments from entering the features; and restoration of temporary impact areas to pre-disturbance conditions in accordance with the standard PG&E Construction Measures (Appendix F).

Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substation. O&M activities associated with implementation of the alternative fiber line scenarios or proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to jurisdictional waters or wetlands beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substation..

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, potential jurisdictional waters occur within the Scenario 1 study area. Potential direct construction impacts to jurisdictional waters would be avoided by locating proposed work areas outside these features. Potential indirect construction impacts to jurisdictional waters would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no potential direct or indirect construction impacts to jurisdictional waters would occur as a result of implementing the Scenario 1 Fiber Line.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase the potential for direct or indirect impacts to jurisdictional waters beyond existing conditions. Therefore, no new O&M impact to jurisdictional waters would occur as a result of implementing the Scenario 1 Fiber Line.

SCENARIO 2 FIBER LINE

As described above, potential jurisdictional waters occur within the Scenario 2 study area. Potential direct construction impacts to jurisdictional waters would be avoided by locating proposed work

areas outside these features. Potential indirect construction impacts to jurisdictional waters would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no potential direct or indirect construction impacts to jurisdictional waters would occur as a result of implementing the Scenario 2 Fiber Line.

O&M activities associated with implementation of the Scenario 2 Fiber Line would not increase the potential for direct or indirect impacts to jurisdictional waters beyond existing conditions. Therefore, no new O&M impact to jurisdictional waters would occur as a result of implementing the Scenario 2 Fiber Line.

SCENARIO 3 FIBER LINE

As described above, potential jurisdictional waters occur within the Scenario 3 study area. Potential direct construction impacts to jurisdictional waters would be avoided by locating proposed work areas outside these features. Potential indirect construction impacts to jurisdictional waters would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no potential direct or indirect construction impacts to jurisdictional waters would occur as a result of implementing the Scenario 3 Fiber Line.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase the potential for direct or indirect impacts to jurisdictional waters beyond existing conditions. Therefore, no new O&M impact to jurisdictional waters would occur as a result of implementing the Scenario 3 Fiber Line.

SUBSTATIONS

As described above, potential jurisdictional waters occur within Cantua Creek located within the study area buffer of Cantua Substation, but outside of the proposed work area footprint. Potential direct construction impacts to Cantua Creek would be avoided by locating proposed work areas outside Cantua Creek. Potential indirect construction impacts to Cantua Creek would be avoided through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, no potential direct or indirect construction impacts to jurisdictional waters would occur as a result of implementing proposed activities at Cantua Substation.

O&M activities associated with implementation of proposed activities at Cantua Substation would not increase the potential for direct or indirect impacts to Cantua Creek beyond existing conditions. Therefore, no new O&M impact to jurisdictional waters would occur as a result of implementing proposed activities at Cantua Substation.

As described above, potential jurisdictional waters do not occur within the Los Banos, Midway, or Gates Substation study areas. Therefore, no potential direct or indirect construction or O&M impacts to jurisdictional waters would occur as a result of implementing proposed activities at the Los Banos, Midway, or Gates Substations.

4.4 Wildlife Movement

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

Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

Habitats within a linkage do not necessarily need to be the same as the habitats being linked. Rather, the linkage merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species during periods of movement among areas of suitable habitat. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending on the species using a corridor, specific physical resources (e.g., rock outcroppings, vernal pools, or specific vegetation cover) may need to be in the habitat linkage at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a relatively short period of time.

Wildlife movement corridors can be both large- and small-scale. At the regional or landscape level, the *California Essential Habitat Connectivity Project* (CDFW 2024b; Spencer et al. 2010) has mapped California Essential Connectivity Areas and Natural Landscape Blocks in the Blue Hills (south of Cantua Creek) and the Ciervo Hills (north of Cantua Creek). These areas are located primarily west of I-5, but extend to the east in a small area where I-5 crosses through the eastern edge of the Blue Hills; in this area, I-5 likely acts as a barrier to non-avian wildlife movement. The locations of the three alternative fiber line study areas and substation study areas relative to mapped habitat connectivity areas are described below.

- **Scenario 1 Fiber Line** runs parallel to the east of I-5. It intersects small segments of the remnant undeveloped eastern edge of the Ciervo Hills extending east of I-5, but does not intersect the Essential Connectivity Areas or Natural Landscape Blocks mapped in this area.
- **Scenario 2 Fiber Line** runs parallel to the east of I-5 coming to within 150 feet of a California Essential Connectivity Area (at its closest point) mapped over I-5 and agricultural areas adjacent to the Blue Hills. While located adjacent to some small segments of the remnant undeveloped eastern edge of the Blue Hills extending east of I-5, it does not intersect them. This fiber line scenario is located in agricultural lands and some limited developed uses.
- **Scenario 3 Fiber Line** co-occurs with the Scenario 2 Fiber Line route for approximately 8 miles from the Gates Substation to the northwest, where it diverges to the west to cross I-5 approximately 4.5 miles further northwest. The remaining portion of this fiber line scenario extends northwest through the Blue Hills, intersecting the Essential Connectivity Area and Natural Landscape Blocks mapped there, until it emerges from these areas for the last 6.5 miles to connect to the utility switchyard.
- **Los Banos Substation** is an existing developed use located within an Essential Connectivity Area and adjacent to a Natural Landscape Block mapped in the hills near San Luis Reservoir.
- **Cantua, Gates, and Midway Substations** are not located within any mapped Essential Connectivity Areas or Natural Landscape Blocks.

In addition, ephemeral drainages such as those described above (e.g., Los Gatos Creek, Domengine Creek, Martinez Creek, Salt Creek, and Cantua Creek) that originate in the Ciervo Hills and Blue Hills and extend into agriculture-dominated lands, as well as the ridges and slopes of the Ciervo Hills and Blue Hills themselves, could serve as corridors for wildlife movement. Ephemeral drainages intersect the Scenario 1, Scenario 2, and Scenario 3 study areas at various locations, and Cantua Creek occurs within the Cantua Substation study area buffer, but outside of the footprint where work is

proposed. The Scenario 3 study area crosses through a small portion of the eastern extent of the Blue Hills where they merge with agricultural lands on the valley floor.

Impact Analysis

The Scenario 1, Scenario 2, or Scenario 3 alternatives would be implemented within existing PG&E transmission corridors, and proposed activities at the substations would be implemented within the fence lines of the Los Banos, Midway, and Gates Substations and within the proposed work area footprint of Cantua Substation located in developed/disturbed and agricultural land cover. For Scenario 1 and Scenario 2, the fiber line would be installed on existing distribution structures, and would not create new barriers to wildlife movement beyond those already represented by the existing PG&E transmission routes. For Scenario 3, the fiber line would be installed either underground, overhead on a dedicated pole line, or a mixture of the two. Potential direct and indirect construction impacts to potentially jurisdictional waters and riparian habitat that might serve as local wildlife corridors would be avoided through installation of fiber line on existing structures, work area siting outside of these features, use of trenchless technology for underground fiber line installation at crossings (for Scenario 3), and implementation of a Storm Water Pollution Prevention Plan and stormwater BMPs to prevent construction-related erosion and sediments from entering the features in accordance with the standard PG&E Construction Measures (Appendix F). For all three alternative fiber line scenarios and for the four substations, construction activities would be temporary, short-term, and would primarily occur during the daytime.

Construction activities could potentially result in a temporary and short-term decrease of wildlife movement in the Scenario 1, Scenario 2, Scenario 3, and Cantua Substation study areas; no impacts to wildlife movement are expected as a result of implementing proposed activities in the Los Banos, Midway, and Gates substations since work will occur within the fence lines of those developed substations. Construction would likely not occur along the entire extent of the chosen alternative fiber line study area all at once. Wildlife can, and would likely, traverse around the work areas in the Scenario 1, Scenario 2, Scenario 3, and Cantua Substation study areas during construction. Potential indirect construction impacts to wildlife movement around construction areas would be further avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require down-shielded lighting to minimize spillover into off-site locations; fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; no vehicles or heavy equipment refueled within 100 feet of a wetland, stream, or other waterway; implementation of a Storm Water Pollution Protection Plan and stormwater BMPs to prevent construction-related erosion and sediments from entering natural waterways; vehicle speeds limited to 15 miles per hour in rights-of-way or on unpaved roads; minimization of disturbance areas; and restoration of temporary impact areas to pre-disturbance conditions (Appendix F).

Proposed fiber line scenario and substation activities would be implemented on existing distribution structures and within existing transmission routes and substations. As a result, O&M activities along the three alternative fiber line scenarios or within the four substations would not increase activities that could impact wildlife movement beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substations.

Impact Conclusions

SCENARIO 1 FIBER LINE

As described above, ephemeral drainages that could serve as corridors for wildlife movement intersect the Scenario 1 study area in several locations. Essential Connectivity Areas or Natural Landscape Blocks are not mapped in the Scenario 1 study area. Scenario 1 Fiber Line construction activities could potentially result in a temporary and short-term decrease of wildlife movement, but wildlife can, and would likely, traverse around the work areas during construction. Potential direct and indirect construction impacts to wildlife movement around construction areas would be further avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, construction associated with implementation of the Scenario 1 Fiber Line would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and construction impacts would be less than significant.

O&M activities associated with implementation of the Scenario 1 Fiber Line would not increase activities that could directly or indirectly impact wildlife movement beyond existing conditions. Therefore, no new O&M impact would occur and O&M activities for the Scenario 1 Fiber Line would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

SCENARIO 2 FIBER LINE

As described above, ephemeral drainages that could serve as corridors for wildlife movement intersect the Scenario 2 study area in several locations. Essential Connectivity Areas or Natural Landscape Blocks are not mapped in the Scenario 2 study area. Scenario 2 Fiber Line construction activities could potentially result in a temporary and short-term decrease of wildlife movement, but wildlife can, and would likely, traverse around the work areas during construction. Potential direct and indirect construction impacts to wildlife movement around construction areas would be further avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, construction associated with implementation of the Scenario 2 Fiber Line would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and impacts would be less than significant.

O&M activities associated with implementation of the Scenario 2 Fiber Line would not increase activities that could directly or indirectly impact wildlife movement beyond existing conditions. Therefore, no new O&M impact would occur and O&M activities for the Scenario 2 Fiber Line would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

SCENARIO 3 FIBER LINE

As described above, ephemeral drainages that could serve as corridors for wildlife movement intersect the Scenario 3 study area in several locations. Essential Connectivity Areas or Natural Landscape Blocks are also mapped in the Scenario 3 study area where it extends into the Blue Hills.

Scenario 3 Fiber Line construction activities could potentially result in a temporary and short-term decrease of wildlife movement, but wildlife can, and would likely, traverse around the work areas during construction. Potential direct and indirect construction impacts to wildlife movement around construction areas would be further avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, construction associated with implementation of the Scenario 3 Fiber Line would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and impacts would be less than significant.

O&M activities associated with implementation of the Scenario 3 Fiber Line would not increase activities that could directly or indirectly impact wildlife movement beyond existing conditions. Therefore, no new O&M impact would occur and O&M activities for the Scenario 3 Fiber Line would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

SUBSTATIONS

- **Midway and Gates Substations:** As described above, no ephemeral drainages that could serve as corridors for wildlife movement occur and no Essential Habitat Connectivity Areas or Natural Landscape Blocks are mapped in the Midway or Gates Substation study areas. Proposed construction and O&M activities would occur within the developed and fenced substations and would not increase activities that could directly or indirectly impact wildlife movement beyond existing conditions. Therefore, construction and O&M activities associated with implementation of proposed activities at the Midway or Gates Substations would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No impact would occur.
- **Los Banos Substation:** As described above, no ephemeral drainages that could serve as corridors for wildlife movement occur within the Los Banos substation study area; however, this substation is located within a mapped Essential Connectivity Area and adjacent to a Natural Landscape Block. Regardless, Los Banos Substation is an existing developed use. Proposed construction and O&M activities would occur within the developed and fenced substation and would not increase activities that could directly or indirectly impact wildlife movement beyond existing conditions. Therefore, construction and O&M activities associated with implementation of proposed activities at Los Banos Substation would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No impact would occur.
- **Cantua Substation:** As described above, Cantua Creek could serve as a corridor for wildlife movement and runs through the Cantua Substation study area, but outside the proposed substation work area footprint. Essential Connectivity Areas or Natural Landscape Blocks are not mapped in the Cantua Substation study area. Construction activities at Cantua Substation would occur within the developed/disturbed and agricultural land covers and wildlife would be able to traverse around the work areas during construction. Potential direct and indirect construction impacts to wildlife movement in Cantua Creek and around construction areas would be further avoided and/or minimized through implementation of the standard PG&E Construction Measures (Appendix F), as described above. O&M activities associated with implementation of

proposed activities at Cantua Substation would not increase activities that could impact wildlife movement beyond existing conditions. Therefore, construction and O&M activities associated with implementation of proposed activities at Cantua Substation would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Direct and indirect construction impacts would be less than significant and no new O&M impact would occur.

4.5 Resources Protected by Local Policies and Ordinances

Fresno County: Three Alternative Fiber Line Scenarios, Cantua Substation, and Gates Substation

Fresno County General Plan Policy OS-A.18 requires that natural watercourses be integrated into new development and the buffer areas between waterways and urban development be provided. Ephemeral drainages intersect portions of the three alternative fiber line study areas as described under *Watersheds and Drainages* and *Jurisdictional Waters*, above.

Section E of the Fresno County General Plan Open Space and Conservation Element includes Goal OS-E: To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels, and 18 applicable policies related to the preservation of natural vegetation communities, wildlife habitat, migration and wildlife corridors and the management of such habitat.

Merced County: Los Banos Substation

The Natural Resources Element of the Merced County General Plan contains Goal NR-1: Preserve and protect, through coordination with the public and private sectors, the biological resources of the County. However, none of this goal's stated policies related to habitat protection, wetland and riparian areas, wildlife movement, special status species, and urban forests, among others, are applicable to the Los Banos Substation, which is an existing developed use and does contain any biological resources addressed in the Merced County General Plan.

Kern County: Midway Substation

The General Provisions of the Kern County General Plan include multiple policies and implementation measures related to threatened and endangered species, surface water and groundwater, and oak trees and woodlands. However, none of these policies or implementation measures are applicable to the Midway Substation, which is an existing developed use and does not contain any biological resources addressed in the Kern County General Plan.

Impact Analysis

- **Three Alternative Fiber Line Scenarios, Cantua Substation, and Gates Substation:** The alternative scenario fiber lines and Cantua and Gates Substations are not considered "urban" under Fresno County General Plan Policy OS-A.18. Proposed activities would be implemented in such a way as to avoid direct and indirect impacts to ephemeral drainages and other sensitive biological resources regulated in Fresno County (per Fresno County General Plan Goal OS-E), including work area siting outside of drainages, and use of trenchless technology for

underground fiber line installation at drainage crossings. Potential direct and indirect construction impacts to the ephemeral drainages, natural vegetation communities, wildlife habitat, migration and wildlife corridors and other biological resources addressed in the Fresno County General Plan would be further avoided and/or minimized through implementation of the standard PG&E Construction Measures, which require surveys and impact avoidance for special status species; fugitive dust control to minimize dust drift into adjacent areas; equipment cleaning prior to entering work areas to avoid invasive species spread; keeping construction equipment in good working order free of leaks; no vehicles or heavy equipment refueled within 100 feet of a wetland, stream, or other waterway; a worker environmental awareness training for all crew members that identifies project-specific practices being implemented to protect biological resources; minimization of disturbance areas; restoration of temporary impact areas to pre-disturbance conditions; and implementation of a Storm Water Pollution Protection Plan and stormwater BMPs to prevent construction-related erosion and sediments from entering natural waterways (Appendix F). Implementation of the alternative fiber line scenarios and proposed activities at Cantua Substation would occur on existing distribution structures and within existing transmission routes and substations. As a result, O&M activities associated with implementation of the alternative fiber line scenarios and Cantua Substation would not increase activities that could directly or indirectly impact drainages, convert wildlife habitat to other uses, or create barriers to migration and wildlife movement beyond existing conditions since PG&E O&M activities, as defined above in Section 1.3.1, would continue to occur as part of ongoing regularly scheduled O&M for those existing distribution structures, transmission routes, and substations.

- **Los Banos Substation:** The Los Banos Substation study area does not contain biological resources that are addressed in the Merced County General Plan. As a result, implementation of proposed activities at the Los Banos Substation would not conflict with the Merced County General Plan policies, or other local policies or ordinances.
- **Midway Substation:** The Midway Substation study area does not contain biological resources that are addressed in the Kern County General Plan. As a result, implementation of proposed activities at the Midway Substation would not conflict with the Kern County General Plan policies, or other local policies or ordinances.

Impact Conclusions

SCENARIO 1 FIBER LINE

Potential direct and indirect construction impacts to biological resources addressed in the Fresno County General Plan would be avoided and/or minimized through Scenario 1 Fiber Line design and implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, construction of the Scenario 1 Fiber Line would not conflict with the Fresno County General Plan, or other local policies or ordinances, and no impact would occur. O&M activities associated with implementing the Scenario 1 Fiber Line would not increase potential for direct or indirect impacts to biological resources addressed in the Fresno County General Plan beyond existing conditions. Therefore, no new O&M impact to biological resources addressed in the Fresno County General Plan would occur as a result of implementing the Scenario 1 Fiber Line. No conflict with the Fresno County General Plan or other local policies and ordinances would occur.

SCENARIO 2 FIBER LINE

Potential direct and indirect construction impacts to biological resources addressed in the Fresno County General Plan would be avoided and/or minimized through Scenario 2 Fiber Line design and implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, construction of the Scenario 2 Fiber Line would not conflict with the Fresno County General Plan, or other local policies or ordinances, and no impact would occur. O&M activities associated with implementing the Scenario 2 Fiber Line would not increase potential for direct or indirect impacts to biological resources addressed in the Fresno County General Plan beyond existing conditions. Therefore, no new O&M impact to biological resources addressed in the Fresno County General Plan would occur as a result of implementing the Scenario 2 Fiber Line. No conflict with the Fresno County General Plan or other local policies and ordinances would occur.

SCENARIO 3 FIBER LINE

Potential direct and indirect construction impacts to biological resources addressed in the Fresno County General Plan would be avoided and/or minimized through Scenario 3 Fiber Line design and implementation of the standard PG&E Construction Measures (Appendix F), as described above. Therefore, construction of the Scenario 3 Fiber Line would not conflict with the Fresno County General Plan, or other local policies or ordinances, and no impact would occur. O&M activities associated with implementing the Scenario 3 Fiber Line would not increase potential for direct or indirect impacts to biological resources addressed in the Fresno County General Plan beyond existing conditions. Therefore, no new O&M impact to biological resources addressed in the Fresno County General Plan would occur as a result of implementing the Scenario 3 Fiber Line. No conflict with the Fresno County General Plan or other local policies and ordinances would occur.

SUBSTATIONS

- **Cantua Substation and Gates Substation:** Potential direct and indirect construction impacts to biological resources addressed in the Fresno County General Plan would be avoided and/or minimized through design, and implementation of the standard PG&E Construction Measures (Appendix F), as described above. O&M activities associated with implementing proposed activities at Cantua Substation would not increase potential for direct or indirect impacts to biological resources addressed in the Fresno County General Plan beyond existing conditions. Therefore, implementation of proposed activities at Cantua Substation and Gates Substation would not conflict with the Fresno County General Plan, or other local policies or ordinances, and no impact would occur.
- **Los Banos Substation:** No biological resources subject to the Merced County General Plan occur in the Los Banos Substation study area. Therefore, implementation of proposed activities at the Los Banos Substation would not conflict with the Merced County General Plan policies, or other local policies or ordinances, and no impact would occur.
- **Midway Substation:** No biological resources subject to the Kern County General Plan occur in the Midway Substation study area. Therefore, implementation of proposed activities at the Midway Substation would not conflict with the Kern County General Plan policies, or other local policies or ordinances, and no impact would occur.

4.6 Habitat Conservation Plans

The three alternative fiber line study areas and four substation study areas are located within the San Joaquin Valley, which is the geographic area covered under PG&E's San Joaquin Valley O&M HCP, as described in Section 1.3.2. The PG&E San Joaquin Valley O&M HCP provides take authorization for 23 wildlife and 42 plant species for 33 routine O&M and minor construction activities for PG&E's electric and gas transmission and distribution systems within nine counties of the San Joaquin Valley.

Construction activities conducted as part of implementing the selected alternative fiber line scenario or proposed activities at the four substations do not meet the definition of limited minor new construction in the HCP. As a result, construction activities for the selected alternative fiber line scenario and for the substations are not considered covered activities and would not be subject to the requirements of or take authorization provided by the HCP and its Implementing Agreement, Federal Permit, and State Permit.

Once constructed, O&M and minor construction activities associated with implementation of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would be conducted as part of the overall O&M Program for the PG&E Transmission and Distribution System in the San Joaquin Valley. Such activities are considered covered activities under the PG&E San Joaquin Valley O&M HCP and would be subject to requirements of and take authorization provided for the covered species specified in the HCP and its Implementing Agreement, Federal Permit and State Permit.

The alternative fiber line study areas and substation study areas are not located within any other local, regional, or State conservation planning areas (CDFW 2023b).

Impact Analysis

Proposed construction activities for the selected alternative fiber line scenario or the four substations are not covered under any adopted HCP, NCCP, or other approved local, regional, or state HCPs. Therefore, construction activities associated with implementation of the alternative fiber line scenarios and proposed activities at the substations would not conflict with any adopted HCP, NCCP, or other approved local, regional, or state HCPs.

Proposed fiber line scenario and substation activities would be implemented on existing distribution structures and within existing transmission routes and substations. As a result, O&M activities associated with implementation of the three alternative fiber line scenarios and the four substations would be conducted as part of the overall O&M Program for the PG&E Transmission and Distribution System in the San Joaquin Valley. As such, they would comply with the requirements of the PG&E San Joaquin Valley O&M HCP and its Implementing Agreement, Federal Permit, and State Permit. Therefore, O&M activities associated with implementing the selected alternative fiber line scenario or proposed activities at the four substations would not conflict with the PG&E San Joaquin Valley O&M HCP or any other adopted HCP, NCCP, or other approved local, regional, or state HCPs.

Impact Conclusions

SCENARIO 1 FIBER LINE

Construction and O&M activities associated with implementation of the Scenario 1 Fiber Line would not conflict with any adopted HCP, NCCP, or other approved local, regional, or state HCPs. There would be no impact.

SCENARIO 2 FIBER LINE

Construction and O&M activities associated with implementation of the Scenario 2 Fiber Line would not conflict with any adopted HCP, NCCP, or other approved local, regional, or state HCPs. There would be no impact.

SCENARIO 3 FIBER LINE

Construction and O&M activities associated with implementation of the Scenario 3 Fiber Line would not conflict with any adopted HCP, NCCP, or other approved local, regional, or state HCPs. There would be no impact.

SUBSTATIONS

Construction and O&M activities associated with implementation of proposed activities at the four substations would not conflict with any adopted HCP, NCCP, or other approved local, regional, or state HCPs. There would be no impact.

5 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Biological surveys for the presence or absence of certain taxa were not conducted as part of this assessment and were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDB RareFind5, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

Thank you for the opportunity to provide this addendum to the Project's Biological Resources Assessment. Please contact the undersigned with any questions.

Sincerely,
Rincon Consultants, Inc.

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Supervising Biologist

David Daitch, Ph.D.
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Appendix A

Figures (Provided Separately)

Appendix B

Regulatory Framework

Regulatory Framework

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include the following:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States)
- Central Valley Regional Water Quality Control Board (waters of the State)
- U.S. Fish and Wildlife Service (federally listed species and migratory birds)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; nesting birds, marine resources)
- County of Fresno
- County of Merced
- County of Kern

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE) is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. In recent years, the USACE and US Environmental Protection Agency (USEPA) have undertaken several efforts to modernize their regulations defining "waters of the United States" (e.g., the 2015 Clean Water Rule and 2020 Navigable Waters Protection Rule), but these efforts have been frustrated by legal challenges which have invalidated the updated regulations. Thus, the agencies' longstanding definition of "waters of the United States," which dates from 1986, remains in effect although it is currently being interpreted consistent with the recent Sackett v. Environmental Protection Agency Supreme Court decision as described below. The USACE and USEPA have announced their intent to issue revised regulations defining "waters of the United States" by September 1, 2023.

Waters of the U.S.

In summary, USACE and USEPA regulations define "waters of the United States" as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;

6. The territorial sea; or
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in items 1-6 above.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(e)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217).

Wetlands

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). The USACE's delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- **Obligate Wetland (OBL).** Almost always occur in wetlands
- **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands
- **Facultative (FAC).** Occur in wetlands or non-wetlands
- **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands
- **Obligate Upland (UPL).** Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on

the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

Limitations on Jurisdiction based on Sackett v. USEPA Supreme Court

On May 25, 2023, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in Sackett provides definitive guidance to the agencies in determining the limits of their Clean Water Act authority. Prioritizing a need for clarity and regulatory certainty, the Court set forth an interpretation of Clean Water Act jurisdiction that can be applied without the need for lengthy case-by-case evaluations. This interpretation will have the effect of reducing the Clean Water Act's geographic reach.

The Court decided:

- "Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells".
- The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. Additionally, the standard includes ecological factors whose use in determining jurisdiction is not supported by the statute.

- Although jurisdiction over tributaries was not addressed by the Court, current agency guidance relies upon the Significant Nexus Standard to establish jurisdiction over tributaries that flow infrequently. In disallowing the use of that standard the decision suggests that non-relatively permanent tributaries will be non-jurisdictional going forward, stating, "…the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States, and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters, and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant requests a pre-application meeting with the RWQCB, waits no less than 30 days, and then submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. Under current regulations, once initiated, the reasonable period of time cannot be stopped or paused. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

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

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) implements several laws protecting the Nation's fish and wildlife resources, including the Endangered Species Act (FESA; 16 United States Code [USC] Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

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

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

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

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

Bald and Golden Eagle Protection Act

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

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

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

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

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

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibits take of species designated as Fully Protected. Under Senate Bill 147, effective July 1, 2023, the CDFW is allowed to issue an Incidental Take Permit for Fully Protected species under CESA through December 31, 2033, or take can be authorized by a Natural Community Conservation Plan (NCCP) which is in place that authorizes take of the Fully Protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal Migratory Bird Treaty Act.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed,

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

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- The plain language of Section 1602 of CFGC establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"
- Applicable court decisions, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- CDFW regulations defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- Guidance documents, including A Field Guide to Lake and Streambed Alteration Agreements (CDFG 1994) and Methods to Describe and Delineate Episodic Stream Processes on Arid

Landscapes for Permitting Utility-Scale Solar Power Plants (Brady and Vyverberg 2013), which suggest the following:

- A stream may flow perennially or episodically
- A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
- Width of a stream course can reasonably be identified by physical or biological indicators
- A stream may have one or more channels (single thread vs. compound form)
- Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
- Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
- Biologic components of a stream may include aquatic and riparian vegetation, all aquatic wildlife including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
- The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Local Jurisdiction

Fresno County, California

The Fresno County General Plan contains goals and policies in the Open Space and Conservation Element concerned with protecting and preserving natural resources and open space areas. These natural resources and open space areas include wetland and riparian areas, fish and wildlife habitat, and vegetation.

Goal OS-A: To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins.

Policy OS-A.1: Water Resources Management Leadership. The County shall provide active leadership in the regional coordination of water resource management efforts affecting Fresno County and shall continue to monitor and participate in, as appropriate, regional activities affecting water resources, groundwater, and water quality.

Policy OS-A.13: Watercourse Access and Benefit. The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element and a buffer area between waterways and urban development in an effort to protect water quality and riparian areas.

Policy OS-A.14: Floodplain Protection. The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.

Policy OS-A.15: San Joaquin River Protection. The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source.

Policy OS-A.19: Water Discharge Pollution Mitigation. The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.

Policy OS-A.20: Minimization of Sedimentation and Erosion. The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.21: Best Management Practices. The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.

Goal OS-D: To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.

Policy OS-D.1: No-Net-Loss Wetlands Policy. The County shall support the "no-net-loss" wetlands policies of the US Army Corps of Engineers, the US Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

Policy OS-D.2: Wetland Loss Mitigation. The County shall require new development to fully mitigate wetland loss for function and value in regulated wetlands to achieve "no-net-loss" through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

Policy OS-D.3: Adjacent Wetland Protection. The County shall require development to be designed in such a manner that pollutants and siltation do not significantly degrade the area, value, or function of wetlands. The County shall require new developments to implement the use of Best Management Practices (BMPs) to aid in this effort.

Policy OS-D.4: Riparian Protection Zones. The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.5: Upland Habitat Protection. The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

Policy OS-D.6: Native Riparian Habitat Protection. The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for creating new riparian habitats within or near the project area. Adjacency to the project area shall be defined as being within the same watershed sub-basin as the project site. Compensation shall be at a ratio of three (3) acres of new habitat for everyone (1) acre destroyed.

Policy OS-D.7: Wetland and Riparian Plant Management. The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.

Policy OS-D.8: Passive Recreation Areas. The County should consider the acquisition of wetland, meadows, and riparian habitat areas for parks limited to passive recreational activities as a method of wildlife conservation.

Goal OS-E: To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.

Policy OS-E.1: Avoid Habitat Loss. The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.2: Construction Buffers. The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Policy OS-E.3: Wildlife Habitat Protection. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.

Policy OS-E.4: Wildlife Habitat Management Practices. The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by the California Department of Fish and Wildlife officials and the US Fish and Wildlife Service.

Policy OS-E.5: Habitat Conservation Plans. The County shall support preservation of habitats of rare, threatened, endangered, and/or other special-status species including fisheries. The County shall consider developing a formal Habitat Conservation Plan in consultation with Federal and State agencies, as well as other resource conservation organizations. Such a plan should provide a mechanism for the acquisition and management of lands that support special-status species.

Policy OS-E.6: Habitat Corridors. The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the county.

Policy OS-E.7: Pesticide Use Monitoring. The County shall continue to closely monitor pesticide use in areas adjacent to habitats of special-status plants and animals.

Policy OS-E.8: Pest Control. The County shall promote effective methods of pest (e.g., ground squirrel) control on croplands bordering sensitive habitat that do not place special-status species at risk, such as the San Joaquin kit fox.

Policy OS-E.9: Biological Resource Evaluation. Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.10: Permanent Protection. The County shall support State and Federal programs to acquire significant fish and wildlife habitat areas for permanent protection and/or passive recreation use.

Policy OS-E.11: Water Withdrawal Protection. The County shall protect significant aquatic habitats against excessive water withdrawals that could endanger special-status fish and wildlife or would interrupt normal migratory patterns.

Policy OS-E.12: Water Habitat Protection. The County shall ensure the protection of fish and wildlife habitats from environmentally degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

Policy OS-E.13: Habitat Protection. The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.14: Wildlife Corridors. The County shall require a minimum 200-foot-wide wildlife corridor along particular stretches of the San Joaquin River and Kings River, whenever possible. The exact locations for the corridors should be determined based on the results of biological evaluations of these watercourses. Exceptions may be necessary where the minimum width is infeasible due to topography or other physical constraints. In these instances, an offsetting expansion on the

Policy OS-E.15: Wildlife Migration Routes Protection. The County should preserve, to the maximum extent practicable, significant wildlife migration routes such as the North Kings Deer Herd migration corridors and fawn production areas.

Policy OS-E.16: High Value Fish and Wildlife Areas. The County should preserve in a natural state to the maximum possible extent areas that have unusually high value for fish and wildlife propagation

Policy OS-E.17: Endangered Species Habitat. The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

Policy OS-E.18: Habitat Easements and Regulation. The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.

Goal OS-F: To preserve and protect the valuable vegetation resources of Fresno County.

Policy OS-F.1: Terrain and Vegetation Preservation. The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.

Policy OS-F.3: Significant Natural Vegetation Areas. The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

Policy OS-F.4: Landmark Trees. The County shall ensure that landmark trees are preserved and protected whenever possible.

Policy OS-F.5: Rare, Threatened, and Endangered Species. The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-F.6: Hillside Development. The County shall require that development on hillsides be limited to maintain valuable natural vegetation, especially forests and open grasslands, and to control erosion.

Policy OS-F.8: Vegetation for Wildlife. The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches, and on unused or marginal land for the benefit of wildlife.

Policy OS-F.10: Woodland Preservation. The County shall require that new developments preserve natural woodlands to the maximum extent possible.

Policy OS-F.11: Oak Woodland Preservation. The County shall promote the preservation and management of oak woodlands by encouraging landowners to follow the Fresno County Oak Management Guidelines, shown on the following page, to prepare an Oak Management Plan for their property.

Merced County, California

The Merced County General Plan contains goals and policies in the Natural Resources Element concerned with protecting and preserving natural resources. These natural resources include wetland and riparian areas, fish and wildlife habitat, and vegetation.

Goal NR-1: Preserve and protect, through coordination with the public and private sectors, the biological resources of the County.

Policy NR-1.1: Habitat Protection (RDR/PSR). Identify areas that have significant long-term habitat and wetland values including riparian corridors, wetlands, grasslands, rivers

and waterways, oak woodlands, and vernal pools, and provide information to landowners.

Policy NR-1.2: Protected Natural Lands (RDR/PSR). Identify and support methods to increase the acreage of protected natural lands and special habitats, including but not limited to, wetlands, grasslands, and vernal pools, potentially through the use of conservation easements

Policy NR-1.3: Forest Protection (SO)**.** Preserve forests, particularly oak woodlands, to protect them from degradation, encroachment, or loss.

Policy NR-1.4: Important Vegetative Resource Protection (SO). Minimize the removal of vegetative resources which stabilize slopes, reduce surface water runoff, erosion, and sedimentation.

Policy NR-1.5: Wetland and Riparian Habitat Buffer (PSR/RDR). Identify wetlands and riparian habitat areas and designate a buffer zone around each area sufficient to protect them from degradation, encroachment, or loss.

Policy NR-1.6: Terrestrial Wildlife Mobility (SO) Encourage property owners within or adjacent to designated habitat connectivity corridors that have been mapped or otherwise identified by the California Department of Fish and Game or U.S. Fish and Wildlife Service to manage their lands in accordance with such mapping programs.

Policy NR-1.7: Agricultural Practices (SO). Encourage agricultural, commercial, and industrial uses and other related activities to coordinate with environmental groups in order to minimize adverse effects to important or sensitive biological resources.

Policy NR-1.8: Use of Native Plant Species for Landscaping (SO). Encourage the use of native plant species in landscaping, and, where the County has discretion, require the use of native plant species for landscaping.

Policy NR-1.9: Rural to Urban Redesignations (MPSP). Carefully consider the potential impacts on significant habitats from new development when redesignating land from a rural to an urban use.

Policy NR-1.10: Aquatic and Waterfowl Habitat Protection (MPSP). Cooperate with local, State, and Federal water agencies in their efforts to protect significant aquatic and waterfowl habitats against excessive water withdrawals or other activities that would endanger or interrupt normal migratory patterns or aquatic habitats.

Policy NR-1.11: On-Going Habitat Protection and Monitoring (PSR). Cooperate with local, State, and Federal agencies to ensure that adequate on-going protection and monitoring occurs adjacent to rare and endangered species habitats or within identified significant wetlands.

Policy NR-1.12: Wetland Avoidance (RDR/PSR/MPSP). Avoid or minimize loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities, including roads, railroads, high speed rail, sewage disposal ponds, gas lines, electrical lines, and water/wastewater systems.

Policy NR-1.13: Wetland Setbacks (RDR). Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands.

Policy NR-1.14: Temporary Residential Uses (RDR). Ensure that buildings and structures approved for temporary residential use in significant wetland areas are not converted to permanent residential uses.

Policy NR-1.15: Urban Forest Protection and Expansion (SO/MPSP). Protect existing trees and encourage the planting of new trees in existing communities. Adopt an Oak Woodland Ordinance that requires trees larger than a specified diameter that are removed to accommodate development be replaced at a set ratio.

Policy NR-1.16: Hazardous Waste Residual Repository Location (RDR). Require new hazardous waste residual repositories (e.g., contaminated soil facilities) to be located at least a mile from significant wetlands, designated sensitive species habitat, and State and Federal wildlife refuges and management areas.

Policy NR-1.17: Agency Coordination (MPSP/IGC/JP). Coordinate with private, local, State, and Federal agencies to assist in the protection of biological resources and prevention of degradation, encroachment, or loss of resources managed by these agencies.

Policy NR-1.18: San Joaquin River Restoration Program Support (MPSP/SO). Monitor the San Joaquin River Restoration Program efforts to ensure protection of landowners, local water agencies, and other third parties.

Policy NR-1.19: Merced River Restoration Program Support (MPSP/SO). Support the restoration efforts for the Merced River consistent with the Merced River Corridor Restoration Plan.

Policy NR-1.20: Conservation Easements. Encourage property owners to work with land trusts and State and Federal agencies to pursue voluntary conservation easements.

Kern County, California

The Kern County General Plan contains policies in its General Provisions concerned with protecting and preserving threatened and endangered species, surface water and groundwater, and oak trees and woodlands.

1.10.5 Threatened and Endangered Species

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 30: The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and federal programs concerning endangered species conservation issues.

Policy 31: Under the provisions of the California Environmental Quality Act (CEQA), the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

Policy 32: Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

1.10.6 Surface Water and Groundwater

Policy 33: Water related infrastructure shall be provided in an efficient and cost effective manner.

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 35: Ensure that adequate water storage, treatment, and transmission facilities are constructed concurrently with planned growth.

Policy 36: Ensure that appropriate funding mechanisms for water are in place to fund the needed improvements resulting from growth and subsequent development.

Policy 37: Ensure maintenance and repair of existing water systems.

Policy 38: Encourage utilization of wastewater treatment facilities which provide for the reuse of wastewater.

Policy 39: Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

Policy 40: Encourage utilization of community water systems rather than the reliance on individual wells.

Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

Policy 42: Encourage water supply purveyors to prepare master water plans for those areas of the County approaching existing design thresholds, including documentation of areas in need of system maintenance and repair.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Policy 45: New high consumptive water uses, such as lakes and golf courses, should require evidence of additional verified sources of water other than local groundwater. Other sources may include recycled stormwater or wastewater.

Policy 46: In accordance with the Kern County Development Standards tank-truck hauling of domestic water for land developments or lots within new land developments is not permitted.

1.10.10 Oak Tree Conservation

Policy 65: Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

Policy 66: Promote the conservation of oak tree woodlands for their environmental value and scenic beauty.

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Appendix C

Species Potential to Occur Table

Special Status Species with Potential to Occur in Vicinity of PG&E Project Site

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Plants							
Acanthomintha lanceolata Santa Clara thorn-mint	None/None G4/S4 4.2	Annual herb. Chaparral, cismontane woodland, coastal scrub. Rocky. Elevations: 260-3935ft. (80-1200m.) Blooms Mar-Jun.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, cismontane woodland, coastal scrub with rocky areas are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Acanthomintha obovata ssp. *obovate* San Benito thorn-mint	None/None G4T3T4/S3S4 4.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Alkaline, clay, serpentinite. Elevations: 1295-4920ft. (395-1500m.) Blooms Apr-Jul.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Allium howellii var. *sanbenitense* San Benito onion	None/None G3G4T3/S3 1B.3	Perennial bulbiferous herb. Chaparral, valley and foothill grassland. Clay, slopes (often). Elevations: 1280-4480ft. (390-1365m.) Blooms Apr-May.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Amsinckia furcate forked fiddleneck	None/None G4/S4 4.2	Annual herb. Cismontane woodland, valley and foothill grassland. Often on shale outcrops in disturbed, rather open sites. Often in gypsum-affected soils. Elevations: 165-3280ft. (50-1000m.) Blooms Feb-May.	No Potential	No Potential	No Potential	No Potential	No suitable shale outcrops in disturbed sites in cismontane woodland or grassland are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Androsace elongata ssp. *Acuta* California androsace	None/None G5?T3T4/S3S 4.2	Annual herb. Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Highly localized and often overlooked little plant. Elevations: 490-4280ft. (150-1305m.) Blooms Mar-Jun.	Low Potential	No Potential	Low Potential	No Potential	Marginally suitable grassland habitat occurs in the Scenario 1 and Scenario 3 study areas where this species has a low potential to occur in undeveloped portions of the eastern edge of the Big Blue Hills and Ciervo Hills. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat. Only one recent CNPS record from 2010 is located within 10 miles of the Scenario 3 study area at higher elevations along Cantua Creek. No CNDDB records of this species resulted from the database query.
Aspidotis carlotta-halliae Carlotta Hall's lace fern	None/None G3/S3 4.2	Perennial rhizomatous herb. Chaparral, cismontane woodland. Serpentinite (usually). Elevations: 330-4595ft. (100-1400m.) Blooms Jan-Dec.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral or cismontane woodland are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Astragalus hornii var. hornii Horn's milk-vetch	None/None GUT1/S1 1B.1	Annual herb. Meadows and seeps, playas. Alkaline, lake margins. Elevations: 195-2790ft. (60-850m.) Blooms May-Oct.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain meadows and seeps or playas with alkaline or lake margins. The CNDDB record of this species only occurred in the database query results for the Midway Substation study area. This species is not expected to occur.
Astragalus rattanii var. *jepsonianus* Jepson's milk-vetch	None/None G4T3/S3 1B.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Serpentinite (often). Elevations: 970-2295ft. (295-700m.) Blooms Mar-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Atriplex cordulata var. *cordulata* heartscale	None/None G3T2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland. Alkaline (sometimes). Elevations: 0-1835ft. (0-560m.) Blooms Apr-Oct.	Low Potential	No Potential	Low Potential	No Potential	Areas of potentially suitable chenopod scrub and grassland habitat occur in small areas in the Scenario 1 and Scenario 3 study areas where this species has low potential to occur in undeveloped portions of the eastern edge of the Big Blue Hills and Ciervo Hills. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat. Only one historic (1993) CNDDB record resulted from the database query, located in the Kerman Ecological Reserve approximately 20 miles northeast of the northern end of the Scenario 1 study area.
Atriplex cordulata var. *erecticaulis* Earlimart orache	None/None G3T1/S1 1B.2	Annual herb. Valley and foothill grassland. Elevations: 130-330ft. (40-100m.) Blooms Aug-Sep(Nov).	No Potential	No Potential	No Potential	No Potential	The Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua and Gates Substations study areas are outside the known elevation range of this species. The Midway and Los Banos Substations study areas are developed and lack suitable habitat for this species. Only one historical (1990) record of this species resulted from the database query; it is located approximately 23 miles east of the northern end of the Scenario 1 study area and noted as extirpated due to agriculture. This species is not expected to occur.
Atriplex coronata var. *coronata* crownscale	None/None G4T3/S3 4.2	Annual herb. Chenopod scrub, valley and foothill grassland, vernal pools. Alkaline, clay (often). Elevations: 5-1935ft. (1-590m.) Blooms Mar-Oct.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential occur in the Scenario 1 and Scenario 3 study areas where they intersect with dense annual grassland habitat. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat. No CNDDB records for this species resulted from the database query. The most recent CNPS record is from 2005 at higher elevations west of the Scenario 1 study area on the west side of I-5.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Atriplex coronata var. *vallicola* Lost Hills crownscale	None/None G4T3/S3 1B.2	Annual herb. Chenopod scrub, valley and foothill grassland, vernal pools. Alkaline. Elevations: 165-2085ft. (50-635m.) Blooms Apr-Sep.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential occur in the Scenario 1 and Scenario 3 study areas where they intersect with chenopod scrub and grassland. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat. Multiple recent CNDDB records of this species are located in the Ciervo Hills, especially along the Monocline Ridge at higher elevations than the Scenario 1 study area.
Atriplex depressa brittlescale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Alkaline, clay. Elevations: 5-1050ft. (1-320m.) Blooms Apr-Oct.	Low Potential	No Potential	Low Potential	No Potential	Potentially suitable chenopod scrub and grassland habitat occur in small areas in the Scenario 1 and Scenario 3 study areas where this species has low potential to occur in undeveloped, remnant portions of the Big Blue Hills or Ciervo Hills that have clay soils. However, these areas are highly fragmented and border disturbed areas, such as agricultural fields. This species is not expected to occur in the Scenario 2 study area or substation study areas due to the lack of suitable habitat.
Atriplex minuscula lesser saltscale	None/None G2/S2 1B.1	Annual herb. Chenopod scrub, playas, valley and foothill grassland. Alkaline, sandy. Elevations: 50-655ft. (15-200m.) Blooms May-Oct.	Low Potential	No Potential	No Potential	No Potential	This species has low potential to occur in a small area of Scenario 1 study area where it intersects alkali playa with chenopod scrub. This species is not expected to occur in the Scenario 1 or Scenario 2 study areas, or in the substation study areas due to the lack of suitable habitat. Only four historical (greater than 30 years old) CNDDB records resulted from the database query, all located in or adjacent to Kerman Ecological Reserve approximately 20 miles east of the northern end of the Scenario 1 study area.
Atriplex subtilis subtle orache	None/None G1/S1 1B.2	Annual herb. Valley and foothill grassland. Alkaline. Elevations: 130-330ft. (40-100m.) Blooms (Apr)Jun-Sep(Oct).	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in small areas in the Scenario 1 and Scenario 3 study areas where they intersect with suitable grassland habitat with alkaline soils. The three historical (more than 30 years old) CNDDB records resulting from the database query are either located in the Kerman Ecological Reserve (approximately 20 miles northeast of the northern end of the Scenario 1 study area) or extirpated. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat.
Azolla microphylla Mexican mosquito fern	None/None G5/S4 4.2	Annual/perennial herb. Marshes and swamps. Ponds and still water. Elevations: 100-330ft. (30-100m.) Blooms Aug.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain marsh and swamp habitat. The CNDDB record of this species only occurred in the database query results for the Midway Substation study area. This species is not expected to occur.
Benitoa occidentalis western lessingia	None/None G3G4/S3S4 4.3	Annual herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Clay (sometimes), serpentinite (sometimes). Elevations: 1475-3510ft. (450-1070m.) Blooms May-Nov.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Calochortus clavatus var. *clavatus* club-haired mariposa lily	None/None G4T3/S3 4.3	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Clay, Rocky, serpentinite (usually). Elevations: 100-4265ft. (30-1300m.) Blooms (Mar)May-Jun.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, cismontane woodland, coastal scrub, or valley and foothill grassland with rocky areas occurs within the three alternative fiber line study areas or the four substation study areas. No CNDDB records of this species resulted from the database query. Two historic (greater than 30 years old) CNPS records are located over 10 miles west and northwest of the Scenario 1 study area at high elevations in the hills in San Benito County. This species is not expected to occur.
Calystegia collina ssp. *venusta* South Coast Range morning-glory	None/None G4T4/S4 4.3	Perennial rhizomatous herb. Chaparral, cismontane woodland, valley and foothill grassland. Serpentinite (sometimes). Elevations: 885-4890ft. (270-1490m.) Blooms Apr-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Camissonia benitensis San Benito evening-primrose	FD/None G2/S2 1B.1	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Carbonate (sometimes), gravelly (sometimes). Elevations: 1970-4200ft. (600-1280m.) Blooms Apr-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Caulanthus californicus California jewelflower	FE/SCE G1/S1 1B.1	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Sandy. Elevations: 200-3280ft. (61-1000m.) Blooms Feb-May.	Low Potential	No Potential	Low Potential	No Potential	Marginally suitable chenopod scrub and grassland habitat occur in small areas in the Scenario 1 and Scenario 3 study areas in undeveloped eastern edge of the Big Blue Hills or Ciervo Hills. However, results of the CNDDB query included only four records all of which are historical (from the 1920s and 1930s) with resurveys in the 1980s indicating those records were either extirpated or possibly extirpated. No suitable habitat is present for this species in the Scenario 2 study area or the substation study areas, which are dominated by agriculture and developed land cover .

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Caulanthus lemmonii Lemmon's jewelflower	None/None G3/S3 1B.2	Annual herb. Pinyon and juniper woodland, valley and foothill grassland. Elevations: 260-5185ft. (80-1580m.) Blooms Feb-May.	Low Potential	No Potential	Low Potential	No Potential	Areas of potentially suitable grassland habitat occur in the Scenario 1 and Scenario 3 study areas where this species has low potential to occur. Only one historical (1962) CNDDB record resulted from the database query, mapped as a best guess around Avenal, approximately 9 miles south of the Gates Substation. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat.
Chloropyron molle ssp. *hispidum* hispid salty bird's-beak	None/None G2T1/S1 1B.1	Annual herb (hemiparasitic). Meadows and seeps, playas, valley and foothill grassland. Alkaline. Elevations: 5-510ft. (1-155m.) Blooms Jun-Sep.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable meadows, seeps and playas. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, which is outside of the known elevation range of this species. This species is not expected to occur.
Chloropyron palmatum palmate-bracted bird's-beak	FE/SE G1/S1 1B.1	Annual herb (hemiparasitic). Chenopod scrub, valley and foothill grassland. Alkaline. Elevations: 15-510ft. (5-155m.) Blooms May-Oct.	No Potential	No Potential	No Potential	No Potential	No suitable valley and foothill grassland with alkaline soils is present in the three alternative fiber line study areas or four substation study areas. In addition, three CNDDB records (1964, 1997, and 2017) resulting from the database query, all located in the Mendota area in the Mendota Wildlife Area or the Alkali Sink Ecological Reserve over 10 miles northeast of the Scenario 1 Fiber Line study area. One is identified as extirpated (1964) and one is a transplant site (1997). This species is not expected to occur.
Cirsium crassicaule slough thistle	None/None G1/S1 1B.1	Annual/perennial herb. Chenopod scrub, marshes and swamps, riparian scrub. Sloughs, riverbanks, and marshy areas. Elevations: 10-330ft. (3-100m.) Blooms May-Aug.	No Potential	No Potential	No Potential	No Potential	The CNDDB record of this species only occurred in the database query results for the Midway Substation study area, which does not provide suitable habitat for this species. This species is not expected to occur.
Clarkia breweri Brewer's clarkia	None/None G4/S4 4.2	Annual herb. Chaparral, cismontane woodland, coastal scrub. Serpentinite (often). Elevations: 705-3660ft. (215-1115m.) Blooms Apr-Jun.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, cismontane woodland or coastal scrub habitats are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Convolvulus simulans small-flowered morning-glory	None/None G4/S4 4.2	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Clay, seeps, serpentinite. Elevations: 100-2430ft. (30-740m.) Blooms Mar-Jul.	No Potential	No Potential	Low Potential	No Potential	Marginally suitable grassland habitat is present in the Scenario 3 study area; however, it is dominated by dense annual grassland lacking in seeps and suitable areas with uncompacted soils where this species could grow. As a result, this species has low potential to occur in the Scenario 3 study area. It is not expected to occur in the Scenario 1 or Scenario 2 Fiber Line study areas or substation study areas due to the lack of suitable habitat.
Cryptantha rattanii Rattan's cryptantha	None/None G4/S4 4.3	Annual herb. Cismontane woodland, riparian woodland, valley and foothill grassland. On steep, south-facing shale talus slopes and canyon bottoms and decomposing talus outcroppings. Elevations: 805-3000ft. (245-915m.) Blooms Apr-Jul.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. In addition, steep, south-facing shale talus slopes and canyon bottoms lands and decomposing talus outcroppings are not present in the three alternative fiber line study areas or the four substation study areas. This species is not expected to occur.
Deinandra halliana Hall's tarplant	None/None G3/S3 1B.1	Annual herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Reported from a variety of substrates including clay, sand, and alkaline soils. Elevations: 855-3115ft. (260-950m.) Blooms (Mar)Apr-May.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	None/None G3T3/S3 1B.2	Perennial herb. Chaparral, cismontane woodland, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. Elevations: 640-3595ft. (195-1095m.) Blooms Apr-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain wet, boggy meadows, openings in chaparral and in canyons. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, which is outside of the known elevation range of this species. This species is not expected to occur.
Delphinium recurvatum recurved larkspur	None/None G2?/S2? 1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline. Elevations: 10-2590ft. (3-790m.) Blooms Mar-Jun.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in the Scenario 1 and Scenario 3 study areas where they intersect with chenopod scrub and grassland on the undeveloped edge of the Ciervo and Big Blue Hills. One 2001 CNDDB record occurs approximately 0.8 mile northwest of the Scenario 3 study area where it intersects I-5. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Eremalche parryi ssp. *kernensis* Kern mallow	FE/None G3G4T3/S3 1B.2	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. On dry, open, sandy to clay soils; usually within valley saltbush scrub; often at edge of balds. Elevations: 230-4230ft. (70-1290m.) Blooms Jan(Feb)Mar-May.	No Potential	No Potential	No Potential	No Potential	Marginally suitable habitat occurs in a small portion of the Scenario 1 study area where it crosses an alluvial fan with chenopod scrub and clay soils, located on the east side of I-5 and cut off from the expanse of the Ciervo Hills. However, no balds are present at this location. No suitable habitat for this species occurs in the Scenario 2 or Scenario 3 study areas, or in the substation study areas. Only one historical (1973) CNDDB record resulted from the database query in Kings County, located approximately 8 miles south of the Gates substation. This species is predominantly located in Kern County. As a result, this species is not expected to occur in the three alternative fiber line study areas or the substation study areas.
Eriastrum hooveri Hoover's eriastrum	FD/None G3/S3 4.2	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. On sparsely vegetated alkaline alluvial fans; also in the Temblor Range on sandy soils. Elevations: 165-3000ft. (50-915m.) Blooms Mar-Jul.	No Potential	No Potential	No Potential	No Potential	Marginally suitable sparsely vegetated alkaline alluvial fans in chenopod scrub and grassland occur in small portions of the Scenario 1 study area where it intersects alluvial fan washes draining from the Ciervo Hills at its eastern edge, east of I-5. No suitable habitat for this species occurs in the Scenario 2 or Scenario 3 study areas, or in the substation study areas. Only 3 historical (older than 30 years) CNDDB records resulted from the database query, all of which are noted as extirpated and located on the valley floor over 20 miles east of the three alternative scenario study areas. As a result, this species is not expected to occur in the alternative fiber line study areas or the substation study areas.
Eriastrum sparsiflorum few-flowered eriastrum	None/None G5/S4 4.3	Annual herb. Chaparral, cismontane woodland, great basin scrub, joshua tree woodland, mojavean desert scrub, pinyon and juniper woodland. Granitic soils; mostly in openings. Elevations: 3525-5610ft. (1075-1710m.) Blooms May-Sep.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species
Eriogonum elegans elegant wild buckwheat	None/None G4G5/S4S5 4.3	Annual herb. Cismontane woodland, valley and foothill grassland. Usually in sandy or gravelly substrates; often in washes, sometimes roadsides. Elevations: 655-5005ft. (200-1525m.) Blooms May-Nov.	No Potential	No Potential	Low Potential	No Potential	The Scenario 1 and Scenario 2 study areas and substation study areas are outside of the known elevation range of this species; it is not expected to occur in those study areas. Marginally suitable grassland is present in the Scenario 3 study area in the Big Blue Hills; however, sandy or gravelly substrates are not generally present. Only two locations within 10 miles of the Scenario 3 study area have records of this species in the CNPS; each location has multiple records, all from 2021 and located at over 3,000 feet in elevation west of the Scenario 3 study area. No CNDDB records of this species resulted from the database query. As a result, this species has low potential to occur in the Scenario 3 study area.
Eriogonum gossypinum cottony buckwheat	None/None G3G4/S3S4 4.2	Annual herb. Chenopod scrub, valley and foothill grassland. Clay soil. Elevations: 330-1805ft. (100-550m.) Blooms Mar-Sep.	No Potential	No Potential	Low Potential	No Potential	No suitable grassland habitat is present in the Scenario 1 or Scenario 2 study areas or the substation study areas. The Scenario 3 study area has marginally suitable grassland habitat, though openings with clay soils are generally absent. Three CNPS records from the early 2000s are located at about 1,000 feet in elevation in the Big Blue Hills and Ciervo Hills in gypsum-rich clay barrens and west facing slope clay barrens. Clay barrens are largely absent from the Scenario 3 study a rea. As a result, this species has low potential to occur in the Scenario 3 study area.
Eriogonum heermannii var. *occidentale* western Heermann's buckwheat	None/None G5T2/S2 1B.2	Perennial deciduous shrub. Cismontane woodland. Openings. Often on serpentine alluvium or on roadsides; rarely on clay or shale slopes. Elevations: 345-2610ft. (105-795m.) Blooms Jul-Oct.	No Potential	No Potential	No Potential	No Potential	No suitable cismontane woodland is present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Eriogonum nudum var. *indictum* protruding buckwheat	None/None G5T4/S4 4.2	Perennial herb. Chaparral, chenopod scrub, cismontane woodland. Barren slopes; clay, serpentine. Elevations: 490-4800ft. (150-1463m.) Blooms (Apr)May-Oct(Dec).	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, chenopod scrub, or cismontane woodland with barren slopes are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Eriogonum temblorense Temblor buckwheat	None/None G2/S2 1B.2	Annual herb. Valley and foothill grassland. Barren clay or sandstone substrates. Elevations: 985-3280ft. (300-1000m.) Blooms (Apr)May-Sep.	No Potential	No Potential	No Potential	No Potential	The CNDDB record of this species only occurred in the database query results for the Midway Substation study area, which does not provide suitable habitat and is outside of the known elevation range of this species. This species is not expected to occur.
Eriogonum umbellatum var. *bahiiforme* *bay buckwheat*	None/None G5T3/S3 4.2	Perennial herb. Cismontane woodland, lower montane coniferous forest. Rocky sites; often serpentine. Elevations: 2295-7220ft. (700-2200m.) Blooms Jul-Sep.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species
Eriogonum vestitum Idria buckwheat	None/None G3/S3 4.3	Annual herb. Valley and foothill grassland. Semi-siliceous diatomaceous shale; barren, clay places. Elevations: 770-2955ft. (235-900m.) Blooms Apr-Aug.	No Potential	No Potential	No Potential	No Potential	No suitable grassland habitat with shale or barren, clay places are present in the three alternative fiber line study areas or the four substation study areas. This species is not expected to occur.

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Eriophyllum jepsonii Jepson's woolly sunflower	None/None G3/S3 4.3	Perennial herb. Chaparral, cismontane woodland, coastal scrub. Sometimes on serpentine. Elevations: 655-3365ft. (200-1025m.) Blooms Apr-Jun.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, cismontane woodland or coastal scrub habitats are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Eryngium spinosepalum spiny-sepaled button-celery	None/None G2/S2 1B.2	Annual/perennial herb. Valley and foothill grassland, vernal pools. Some sites on clay soil of granitic origin; vernal pools, within grassland. Elevations: 260-3200ft. (80-975m.) Blooms Apr-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable grassland habitat with vernal pools. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Eschscholzia hypecoides San Benito poppy	None/None G4/S4 4.3	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Serpentine clay. Elevations: 655-4920ft. (200-1500m.) Blooms Mar-Jun.	Low Potential	No Potential	Moderate Potential	No Potential	Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Potentially suitable grassland habitat with washes is present in the Scenario 1 and Scenario 3 study areas. No CNDDB records of this species resulted from the database query. However, multiple recent CNPS records are present in the Ciervo Hills at much higher elevations, and one historical CNPS record (1988) is located in Cantua Creek wash within the Scenario 3 study area. As a result, this species has low potential to occur in the Scenario 1 study area and moderate potential to occur in the Scenario 3 study area grassland habitats, particularly along washes. It is not expected to occur in the Scenario 2 study area or substation study areas.
Eschscholzia lemmonii ssp. *kernensis* Tejon poppy	None/None G5T2/S2 1B.1	Annual herb. Chenopod scrub, valley and foothill grassland. Little information available on habitat. Elevations: 525-3280ft. (160-1000m.) Blooms (Feb)Mar-May.	No Potential	No Potential	No Potential	No Potential	The CNDDB record of this species only occurred in the database query results for the Midway Substation study area, which does not provide suitable habitat and is outside of the known elevation range of this species. This species is not expected to occur.
Extriplex joaquinana San Joaquin spearscale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with *Distichlis spicata*, *Frankenia*, etc. Elevations: 5-2740ft. (1-835m.) Blooms Apr-Oct.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in limited locations in the Scenario 1 and Scenario 3 study areas where suitable chenopod scrub and grassland habitat occur. Only two CNDDB records resulted from the database query, both located approximately 7 miles southwest of the utility switchyard in an area along Cantua Creek above 1,400 feet. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat..
Fritillaria agrestis stinkbells	None/None G3/S3 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. Sometimes on serpentine; mostly found in nonnative grassland or in grassy openings in clay soil. Elevations: 35-5100ft. (10-1555m.) Blooms Mar-Jun.	Moderate Potential	No Potential	Moderate Potential	No Potential	Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Marginally suitable grassland habitat is present in the Scenario 1 and Scenario 3 study areas. One historical (greater than 30 years old) CNDDB record and multiple recent CNPS records resulting from the database query are document along San Joaquin Ridge near Joaquin Rocks overlook in the Diablo Range at 3,000 feet in elevation west of the Scenario 3 study area, with notes indicating their presence in areas with off-road vehicle and cattle grazing activity. As a result, this species has low potential to occur in the Scenario 1 study area and moderate potential to occur in the Scenario 3 study area grassland habitats, particularly along washes and is not expected to occur in the Scenario 2 study area or substation study areas.
Fritillaria falcata talus fritillary	None/None G2/S2 1B.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, lower montane coniferous forest. Mostly on serpentine talus, but occasionally found on granitics. Elevations: 985-5005ft. (300-1525m.) Blooms Mar-May.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Fritillaria viridea San Benito fritillary	None/None G2/S2 1B.2	Perennial bulbiferous herb. Chaparral, cismontane woodland. Serpentine slopes. Sometimes on rocky streambanks. Elevations: 655-5005ft. (200-1525m.) Blooms Mar-May.	No Potential	No Potential	No Potential	No Potential	No suitable serpentine slopes or rocky streambanks in chaparral or cismontane woodland are present in the three alternative scenario study areas or substation study areas. This species is not expected to occur.
Galium andrewsii ssp. *gatense* phlox-leaf serpentine bedstraw	None/None G5T3/S3 4.2	Perennial herb. Chaparral, cismontane woodland, lower montane coniferous forest. Dry, rocky places in serpentine soil. Elevations: 490-4755ft. (150-1450m.) Blooms Apr-Jul.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, cismontane woodland, or lower montane coniferous forest habitats are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Goodmania luteola golden goodmania	None/None G3/S3 4.2	Annual herb. Meadows and seeps, mojavean desert scrub, playas, valley and foothill grassland. Alkaline or clay soils. Elevations: 65-7220ft. (20-2200m.) Blooms Apr-Aug.	Low Potential	No Potential	Low Potential	No Potential	Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Marginally suitable grassland habitat is present in the Scenario 1 and Scenario 3 study areas. No CNDDB records and only two historical CNPS records (1937) of this species resulted from the database query located over 10 miles northeast of the utility switchyard near Kerman, California. As a result, this species has a low potential to occur in the Scenario 1 and Scenario 3 study areas and is not expected to occur in the Scenario 2 study area or four substation study areas.

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Hesperevax caulescens hogwallow starfish	None/None G3/S3 4.2	Annual herb. Valley and foothill grassland, vernal pools. Clay soils; mesic sites. Elevations: 0-1655ft. (0-505m.) Blooms Mar-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable grassland habitat with vernal pools or mesic sites. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Hordeum intercedens vernal barley	None/None G3G4/S3S4 3.2	Annual herb. Coastal dunes, coastal scrub, valley and foothill grassland, vernal pools. Vernal pools, dry, saline streambeds, alkaline flats. Elevations: 15-3280ft. (5-1000m.) Blooms Mar-Jun.	No Potential	No Potential	No Potential	No Potential	No vernal pools or saline streams are present in the alternative fiber line study areas or substation study areas. No CNDDB records and one CNDDB records (2003) of this species resulted from the database query. The single CNDDB record is located at high elevation near San Benito Mountain over 10 miles west of the Scenario 3 study area. This species is not expected to occur.
Iris longipetala coast iris	None/None G3/S3 4.2	Perennial rhizomatous herb. Coastal prairie, lower montane coniferous forest, meadows and seeps. Mesic sites, heavy soils. Elevations: 0-1970ft. (0-600m.) Blooms Mar-May(Jun).	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable coastal prairie, lower montane coniferous forest, meadows or seeps. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Lagophylla diabolensis Diablo Range hare-leaf	None/None G2/S2 1B.2	Annual herb. Cismontane woodland, valley and foothill grassland. Clay. Elevations: 1200-2905ft. (365-885m.) Blooms Apr-Sep.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Lasthenia chrysantha alkali-sink goldfields	None/None G2/S2 1B.1	Annual herb. Vernal pools. Alkaline. Elevations: 0-655ft. (0-200m.) Blooms Feb-Apr.	No Potential	No Potential	No Potential	No Potential	No suitable habitat is present in the three alternative fiber line study areas or the substation study areas. Extant populations of this species in the region occur in the Kerman Ecological Reserve approximately 20 miles northeast of the northern end of Scenario 1 study area. This species is not expected to occur.
Lasthenia ferrisiae Ferris' goldfields	None/None G3/S3 4.2	Annual herb. Vernal pools. Alkaline, clay soils. Elevations: 65-2295ft. (20-700m.) Blooms Feb-May.	No Potential	No Potential	No Potential	No Potential	No vernal pools are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Lasthenia glabrata ssp. coulteri Coulter's goldfields	None/None G4T2/S2 1B.1	Annual herb. Marshes and swamps, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-. Elevations: 5-4005ft. (1-1220m.) Blooms Feb-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable marshes, swamps, playas or vernal pools. The CNDDB record of this species only occurred in the database query results for the Los Banos and Midway Substations study areas. This species is not expected to occur.
Layia discoidea rayless layia	None/None G2/S2 1B.1	Annual herb. Chaparral, cismontane woodland, lower montane coniferous forest. On serpentine alluvium and serpentine talus. Elevations: 2610-5200ft. (795-1585m.) Blooms May.	No Potential	No Potential	No Potential	No Potential	No suitable habitat is present in the three alternative fiber line study areas or the substation study areas, which are also outside of the known elevation range of this species. This species is not expected to occur.
Layia heterotricha pale-yellow layia	None/None G2/S2 1B.1	Annual herb. Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Alkaline or clay soils; open areas. Elevations: 985-5595ft. (300-1705m.) Blooms Mar-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Layia munzii Munz's tidy-tips	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, valley and foothill grassland. Hillsides, in white-grey alkaline clay soils, w/grasses and chenopod scrub associates. Elevations: 490-2295ft. (150-700m.) Blooms Mar-Apr.	Low Potential	No Potential	Low Potential	No Potential	Areas of potentially suitable chenopod scrub and grassland habitat occur in portions of the Scenario 1 and Scenario 3 study areas that intersect undeveloped lands along the eastern edge of the Ciervo and Big Blue Hills, where this species has low potential to occur. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat.
Lepidium jaredii ssp. *album* Panoche pepper-grass	None/None G2G3T2T3/S2S3 1B.2	Annual herb. Valley and foothill grassland. White or grey clay lenses on steep slopes; incidental in alluvial fans and washes. Clay and gypsum-rich soils. Elevations: 605-2445ft. (185-745m.) Blooms Feb-Jun.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in a limited number of locations along the Scenario 1 and Scenario 3 study areas where they intersect alluvial fans and washes draining from the Ciervo and Big Blue Hills. All CNDDB records resulting from the database query are located along steep slopes in the Panoche and Ciervo Hills west and on the other side of I-5 of the Scenario 1 study area. This species is not expected to occur in the Scenario 2 study area or in the substation study areas due to the lack of suitable habitat.
Leptosiphon ambiguous serpentine leptosiphon	None/None G4/S4 4.2	Annual herb. Cismontane woodland, coastal scrub, valley and foothill grassland. Grassy areas on serpentine soil. Elevations: 395-3710ft. (120-1130m.) Blooms Mar-Jun.	Low Potential	No Potential	Low Potential	No Potential	Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Marginally suitable grassland habitat is present in the Scenario 1 and Scenario 3 study areas. No CNDDB records of this species resulted from the database query. However, multiple recent CNPS records are located at high elevation west of Joaquin Rocks over 10 miles west of the Scenario 3 study area. As a result, this species has a low potential to occur in the Scenario 1 and Scenario 3 study areas and is not expected to occur in the Scenario 2 study area or four substation study areas.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Leptosiphon grandifloras large-flowered leptosiphon	None/None G3G4/S3S4 4.2	Annual herb. Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland. Open, grassy flats, generally sandy soil. 5-. Elevations: 15-4005ft. (5-1220m.) Blooms Apr-Aug.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, or grassland with open, grassy flats. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Lessingia tenuis spring lessingia	None/None G4/S4 4.3	Annual herb. Chaparral, cismontane woodland, lower montane coniferous forest. Openings. Elevations: 985-7055ft. (300-2150m.) Blooms May-Jul.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral, cismontane woodland, or lower montane coniferous forest habitats are present in the three alternative fiber line study areas or four substation study areas. In addition, the three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species This species is not expected to occur.
Madia radiata showy golden madia	None/None G3/S3 1B.1	Annual herb. Cismontane woodland, valley and foothill grassland. Mostly on adobe clay in grassland or among shrubs. Elevations: 80-3985ft. (25-1215m.) Blooms Mar-May.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in portions of the Scenario 1 and Scenario 3 study areas that intersect suitable grassland habitat at the undeveloped edge of the Ciervo and Big Blue Hills. This species is not expected to occur in the Scenario 2 study area or substation study areas due to the lack of suitable habitat.
Malacothamnus aboriginum Indian Valley bush-mallow	None/None G3/S3 1B.2	Perennial deciduous shrub. Chaparral, cismontane woodland. Granitic outcrops and sandy bare soil, often in disturbed soils. Elevations: 490-5580ft. (150-1700m.) Blooms Apr-Oct.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral or cismontane woodland with granitic outcrops and sandy bare soil is present in the three alternative fiber line study areas or substation study areas. This species is not expected to occur.
Malacothamnus hallii Hall's bushmallow	None/None G2/S2 1B.2	Perennial deciduous shrub. Chaparral, coastal scrub. Some populations on serpentine. Elevations: 35-2495ft. (10-760m.) Blooms (Apr)May-Sep(Oct).	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable chaparral or cismontane woodland. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Microseris sylvatica sylvan microseris	None/None G4/S4 4.2	Perennial herb. Chaparral, cismontane woodland, great basin scrub, pinyon and juniper woodland, valley and foothill grassland. Serpentinite (rarely). Elevations: 150-4920ft. (45-1500m.) Blooms Mar-Jun.	Low Potential	No Potential	Low Potential	No Potential	Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Marginally suitable grassland habitat is present in the Scenario 1 and Scenario 3 study areas. No CNDDB records and only one CNPS quad record of this species (in the Joaquin Rocks quad at high elevation west of the Scenario 3 study area) resulted from the database query. The next closest CNPS records are located further to the west in San Benito County at high elevation. As a result, this species has low potential to occur in the Scenario 1 and Scenario 3 study areas and is not expected to occur in the Scenario 2 study area or substation study areas.
Monardella antonina ssp. *Benitensis* San Benito monardella	None/None G4T3/S3 4.3	Perennial rhizomatous herb. Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Serpentine barrens. Elevations: 1640-5150ft. (500-1570m.) Blooms Jun-Jul.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Monardella palmeri Palmer's monardella	None/None G2/S2 1B.2	Perennial rhizomatous herb. Chaparral, cismontane woodland. On serpentine, often found associated with Sargent cypress forests. Elevations: 655-2625ft. (200-800m.) Blooms Jun-Aug.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral or cismontane woodland habitats are present in the three alternative fiber line study areas or four substation study areas. In addition, the three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Monolopia congdonii San Joaquin woollythreads	FE/None G2/S2 1B.2	Annual herb. Chenopod scrub, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. Elevations: 195-2625ft. (60-800m.) Blooms Feb-May.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in portions of the Scenario 1 and Scenario 3 study areas that intersect chenopod scrub and grassland at the undeveloped edge of the Ciervo and Big Blue Hills. The closest CNDDB records to the Scenario 1 and Scenario 3 study areas are from the 1890s, 1930s, and 1940s, and noted as extirpated or possibly extirpated based on re-surveys in the 1980s. Otherwise, other occurrences are recorded in the Kettleman Hills south of the Gates Substation and at or further west of the Monvero Residual Dunes at much higher elevations in the Ciervo Hills. This species is not expected to occur in the Scenario 2 study area or the substation study areas due to the lack of suitable habitat.
Navarretia gowenii Lime Ridge navarretia	None/None G1/S1 1B.1	Annual herb. Chaparral. On calcium carbonate-rich soil with high clay content. Elevations: 590-1000ft. (180-305m.) Blooms May-Jun.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable chaparral habitat. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, which is outside of the known elevation range of this species. This species is not expected to occur.

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Navarretia nigelliformis ssp. *radians* shining navarretia	None/None G4T2/S2 1B.2	Annual herb. Cismontane woodland, valley and foothill grassland, vernal pools. Apparently in grassland, and not necessarily in vernal pools. Elevations: 215-3280ft. (65-1000m.) Blooms (Mar)Apr-Jul.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in portions of the Scenario 1 and Scenario 3 study areas where they intersect suitable grassland habitat. Only one 2016 CNDDB record resulted from the database query, located approximately 8 miles west of the utility switchyard along Cantua Creek above 1,600 feet. This species is not expected to occur in the Scenario 2 study area or in the substation study areas due to the lack of suitable habitat.
Navarretia panochensis Panoche navarretia	None/None G3/S3 1B.3	Annual herb. Chenopod scrub, valley and foothill grassland. Clay, Gravelly (often). Elevations: 1085-2820ft. (330-860m.) Blooms Apr-Aug.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Navarretia prostrata prostrate vernal pool navarretia	None/None G2/S2 1B.2	Annual herb. Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevations: 10-3970ft. (3-1210m.) Blooms Apr-Jul.	Low Potential	No Potential	Low Potential	No Potential	This species has low potential to occur in portions of the Scenario 1 and Scenario 3 study areas where they intersect grassland habitat with mesic soils, primarily near washes draining from the Ciervo and Big Blue Hills. All CNDDB records from the database query are located over 5 miles southwest of the Scenario 3 study area above 3,000 feet. This species is not expected to occur in the Scenario 2 study area or in the substation study areas due to the lack of suitable habitat.
Piperia michaelii *Michael's rein orchid*	None/None G3/S3 4.2	Perennial herb. Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Mudstone and humus, generally dry sites. Elevations: 10-3000ft. (3-915m.) Blooms Apr-Aug.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, or lower montane coniferous forest. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, which is outside of the known elevation range of this species. This species is not expected to occur.
Phacelia phacelioides Mt. Diablo phacelia	None/None G2/S2 1B.2	Annual herb. Chaparral, cismontane woodland. Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. Elevations: 1640-4495ft. (500-1370m.) Blooms Apr-May.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Ravenella exigua chaparral harebell	None/None G2/S2 1B.2	Chaparral (rocky, usually serpentinite). Rocky sites, usually on serpentine in chaparral. 275-1250m. Blooms May-Jun.	No Potential	No Potential	No Potential	No Potential	No suitable chaparral with rocky sites is present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Puccinellia simplex California alkali grass	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. Elevations: 5-3050ft. (2-930m.) Blooms Mar-May.	No Potential	No Potential	No Potential	No Potential	Areas of potentially suitable chenopod scrub and grassland habitat occur in portions of the Scenario 1 and Scenario 3 study areas where they intersect undeveloped, remnant portions of the Big Blue Hills or Ciervo Hills. However, sinks, flats, and lake margins that provide vernally mesic substrates are absent. CNDDB occurrences are located at the Kerman Ecological Reserve 20 miles northeast of the northern end of the Scenario 1 study area. No suitable habitat for this species is present in the substation study areas. This species is not expected to occur.
Sagittaria sanfordii Sanford's arrowhead	None/None G3/S3 1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. Elevations: 0-2135ft. (0-650m.) Blooms May-Oct(Nov).	No Potential	No Potential	No Potential	No Potential	No suitable marsh or swamp habitat is present in the three alternative fiber line study areas or substation study areas. This species is not expected to occur.
Senecio aphanactis chaparral ragwort	None/None G3/S2 2B.2	Annual herb. Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. Elevations: 50-2625ft. (15-800m.) Blooms Jan-Apr(May).	Low Potential	No Potential	Low Potential	No Potential	Most CNDDB records from the database query results occur in the hills west of the three alternative fiber line study areas, some of which are documented in annual grassland with clay, alkaline soils along drainages. There is a low potential for this species to occur in drainages and washes with clay or alkaline soils that intersect the Scenario 1 and Scenario 3 study areas in the undeveloped eastern edge of the Big Blue Hills and Ciervo Hills. Such locations are limited. This species is not expected to occur in the Scenario 2 study area or in the substation study areas due to the lack of suitable habitat.
Solidago guiradonis Guirado's goldenrod	None/None G3/S3 4.3	Perennial rhizomatous herb. Cismontane woodland, valley and foothill grassland. Near serpentine streams or seeps in asbestos-laden soils; serpentine. Elevations: 1970-4495ft. (600-1370m.) Blooms Sep-Oct.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Streptanthus insignis ssp. *insignis* plumed jewelflower	None/None G3G4T3T4/S3S4 4.3	Annual herb. Chaparral. Graywacke, Openings, Rocky, Serpentinite (often), Shale, Talus. Elevations: 985-3610ft. (300-1100m.) Blooms Mar-May.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Streptanthus insignis ssp. lyonia *Arburua Ranch jewelflower*	None/None G3G4T2/S2 1B.2	Annual herb. Coastal scrub. Serpentine slopes; also on non-serpentine. Elevations: 755-2805ft. (230-855m.) Blooms Mar-May.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas do not contain suitable coastal scrub habitat. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, which is outside of the known elevation range of this species. This species is not expected to occur.
Stuckenia filiformis ssp. alpina northern slender pondweed	None/None G5T5/S2S3 2B.2	Perennial rhizomatous herb (aquatic). Marshes and swamps. Shallow, clear water of lakes and drainage channels. Elevations: 985-7055ft. (300-2150m.) Blooms May-Jul.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, where no marshes or swamps are present. This species is not expected to occur.
Stylocline citroleum oil neststraw	None/None G3/S3 1B.1	Annual herb. Chenopod scrub, coastal scrub, valley and foothill grassland. Flats, clay soils in oil-producing areas. Elevations: 165-1310ft. (50-400m.) Blooms Mar-Apr.	No Potential	No Potential	No Potential	No Potential	The CNDDB record of this species only occurred in the database query results for the Midway Substation study area, which does not include chenopod scrub, coastal scrub, or grassland habitat. This species is not expected to occur.
Trichostema ovatum San Joaquin bluecurls	None/None G3/S3 4.2	Annual herb. Chenopod scrub, valley and foothill grassland. Sandy alluvial soil. In grassland, and disturbed sites. Elevations: 215-1050ft. (65-320m.) Blooms (Apr-Jun)Jul-Oct.	Low Potential	No Potential	Low Potential	No Potential	Suitable grassland habitat is not present in the Scenario 2 study area or the substation study areas. Marginally suitable grassland habitat is present in the Scenario 1 and Scenario 3 study areas. No CNDDB records for this species resulted from the database query. Multiple recent CNPS records are from one location in in the Ciervo Hills northwest of the Scenario 1 study area above Panoche Creek. This species has low potential to occur in the Scenario 1 and Scenario 3 study areas in alluvial soils that may be present in the grassland habitats and is not expected to occur in the Scenario 2 study area or substation study areas.
Trichostema rubisepalum Hernandez bluecurls	None/None G4/S4 4.3	Annual herb. Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, vernal pools. Volcanic or serpentine substrates. Elevations: 985-4710ft. (300-1435m.) Blooms Jun-Aug.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the four substation study areas are outside of the known elevation range of this species. This species is not expected to occur.
Invertebrates							
Bombus crotchii Crotch's bumble bee	None/SCE G2/S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	No Potential	No Potential	No Potential	No Potential	No current occurrences of the species have been recorded within 5 miles of the alternative fiber line study areas or the substation study areas. While this species was historically common in the Central Valley of California, the 2014 International Union for Conservation of Nature Assessment indicates Crotch's bumble bee is considered by most authorities to be absent from most of the central portion of its historic range due to extensive agricultural intensification and increased use of pesticides (Hatfield et al. 2015). Therefore, Crotch's bumble bee is not expected to occur in the alternative fiber line study areas or substation study areas.
Branchinecta longiantenna longhorn fairy shrimp	FE/None G2/S2	Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	No Potential	No Potential	No Potential	No Potential	No vernal pools are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No Potential	No Potential	No Potential	No Potential	No vernal pools are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	FC/None G4T1T2Q/S2	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	No Potential	No Potential	No Potential	No Potential	The alternative fiber line study areas and substation study areas do not contain suitable overwinter roost trees, nor are they located along the California coast where known overwintering populations occur. Milkweed is unlikely to occur in the alternative fiber line study areas and substation study areas. No CNDDB records of this species resulted from the database query; however, it was evaluated since it was identified during the IPAC search. As a result, this species is not expected to occur.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/None G3T3/S3	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	No Potential	No Potential	No Potential	No Potential	No blue elderberry are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.

Scientific Name **Common Name**	**Status**	**Habitat Requirements**	**Potential to Occur in Alternative Scenario Study Areas** **Scenario 1 Fiber Line**	**Scenario 2 Fiber Line**	**Scenario 3 Fiber Line**	**Developed Substations**	**Habitat Suitability/Observations**
Lepidurus packardi vernal pool tadpole shrimp	FE/None G3/S3	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	No Potential	No Potential	No Potential	No Potential	The alternative fiber line study areas and the Cantua, Gates, and Midway Substation study areas are not located in the Sacramento Valley. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. No vernal pools or swales are present in the Los Banos Substation study area. This species is not expected to occur.
Fish							
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	FT/None G5T2Q/S2 SSC	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	No Potential	No Potential	No Potential	No Potential	The alternative fiber line study areas and substation study areas do not contain fish runs in the coastal basins. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Amphibians							
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	FT/ST G2G3T3/S3 WL	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Low Potential	No Potential	Low Potential	No Potential	California tiger salamander inhabits annual grasslands and open woodlands and requires upland habitat with underground refugia and seasonal water sources for breeding. The species spends most of its life with little movement in underground small mammal burrows; however, during the breeding season typically between November and February, this species migrates at night during rain events, traveling between upland habitat and breeding ponds (Orloff 2011). This species is closely associated with California ground squirrel underground burrows (Trenham 2001), and active populations of burrowing rodents are likely required to sustain California tiger salamanders as inactive burrow systems collapse and become progressively unsuitable over time (Loredo et al. 1996). Aquatic breeding sites include vernal pools and other seasonal ponds and stock ponds that typically have minimal emergent vegetation, lack predatory fish or bullfrogs, and are inundated for at least 12 weeks during the breeding season to allow for larval metamorphosis to be completed. Agricultural areas in the three alternative fiber line study areas and Cantua Substation study area are regularly disturbed for actively managed orchards, vegetable crops and limited grain crops, and for disking retired agricultural parcels. As a result, this species is not expected to occur in the Scenario 2 study area or substation study areas, which are dominated by agricultural and developed/disturbed land covers. Annual grassland occurs along the western edge of the Ciervo Hills and Big Blue Hills in the Scenario 1 and Scenario 3 study areas. These study areas do not support suitable aquatic habitat for the species. Infrequent and spread out seasonal impoundments in the annual grassland in the Ciervo Hills and Big Blue Hills are generally small, intermittently dry, and isolated (no other ponded water occurring within California tiger salamander dispersal range). There are no California tiger salamander occurrences within 10 miles of the grassland habitat in the Scenario 1 and Scenario 3 study areas. Additionally, there are no known occurrences of this species on the eastern edge of the Ciervo Hills and Big Blue Hills. As such, there is low potential for this species to occur within the grassland habitat in the Scenario 1 and Scenario 3 study areas.
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	FT/SE G3T2/S2	San Francisco Peninsula and Diablo Range south of San Francisco Bay Estuary, and south through the Santa Cruz and Gabilan Mountains east of the Salinas River in the southern inner Coast Ranges. Partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis.	No Potential	No Potential	No Potential	No Potential	Suitable shaded shallow streams and cobble substrate do not occur in the alternative fiber line study areas or substation study areas. This species is not expected to occur.
Rana draytonii California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	No Potential	No Potential	No Potential	No Potential	Now lowlands or foothills near permanent sources of deep water with dense, shrubby or emergent riparian vegetation are present in the alternative fiber line study areas or substation study areas. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Spea hammondii western spadefoot	FPT/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	No Potential	No Potential	No Potential	No Potential	Vernal pools do not occur in the alternative fiber line study areas or substation study areas. The alternative fiber line study areas do not intersect irrigation basins or drainages with sufficient water to support the life stages of this species. This species is not expected to occur.
Reptiles							
Anniella alexanderae Temblor legless lizard	None/SCE G1/S1 SSC	Sandy soil at the southeast base of the Temblor Ranges, southwestern San Joaquin Valley, Kern County. This species known range is limited to a narrow strip along the Temblor Mountain Range west of Interstate five, generally between Coalinga and Taft. The microhabitat of this species is poorly known. Other legless lizard species occur in sparsely vegetated areas with moist, loose soil. Often found underneath leaf litter, rocks, and logs.	No Potential	No Potential	No Potential	No Potential	The alternative fiber line study areas and substation study areas are outside of the Temblor Mountain Range between Coalinga and Taft, and therefore not within the known range of this species. This species is not expected to occur.
Anniella grinnelli Bakersfield legless lizard	None/None G2G3/S2S3 SSC	Southern San Joaquin Valley. Known from two disjunct areas: the east side of the Carrizo Plain and portions of the city limits of Bakersfield. Microhabitat of this species is poorly known. Other legless lizard species occur in sparsely vegetated areas with moist, loose soil. Often found underneath leaf litter, rocks, and logs.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and substation study areas do not overlap with the two areas where this species has been documented. The CNDDB record of this species only occurred in the database query results for the Midway Substation study area. This species is not expected to occur.
Anniella pulchra Northern California legless lizard	None/None G3/S2S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	No Potential	No Potential	No Potential	No Potential	Suitable sandy or loose loamy soils with high moisture content do not occur in the alternative fiber line study areas or substation study areas. The closest CNDDB record for this species was approximately 3 miles west of the utility switchyard in 1940, centered on upstream Cantua Creek at about 1,000 feet in elevation. This species is not expected to occur.
Arizona elegans occidentalis California glossy snake	None/None G5T2/S2 SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	High Potential	No Potential	High Potential	No Potential	Areas of potentially suitable scrub and grassland habitat occur within the Scenario 1 and Scenario 3 study areas. The most recent CNDDB occurrence was documented in 2015 0.1 mile east of the Scenario 3 study area near the intersection of Coalinga Road and I-5. This species has high potential to occur in the Scenario 1 and Scenario 3 study areas; it has no potential to occur in the Scenario 2 study area and in the substation areas due to the lack of suitable scrub and grassland habitat in those locations.
Emys marmorata western pond turtle	FPT/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Needs basking sites and suitable (suitable sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	No Potential	No Potential	No Potential	No Potential	Suitable ponds, marshes, rivers and streams do not occur in the alternative fiber line study areas or substation study areas. This species is not expected to occur.
Gambelia sila blunt-nosed leopard lizard	FE/SE G1/S2 FP	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	Moderate Potential	No Potential	Moderate Potential	No Potential	Marginally suitable scrub habitat occurs in the Scenario 1 study area where it intersects remnant portions of the Ciervo Hills on the east side of I-5 that contain atriplex scrub. A portion of the Scenario 3 study area includes annual grassland in the Big Blue Hills and Ciervo Hills; this area generally has high topographic relief and dense annual grassland vegetation, with few shrubs for cover. However, the Scenario 3 study area includes a dirt access road along the transmission corridor and also intersects areas showing signs of past cattle crazing, which may have created marginally suitable sparsely vegetated areas. As a result, this species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas. The Scenario 2 study area and substation study areas are dominated by agricultural and/or developed/disturbed land covers, which are regularly disked or maintained and do not offer relatively permanent suitable bare ground and shrubs for the species. As a result, there is no suitable scrub habitat present in the Scenario 2 study area or in the substation study areas, and the species is not expected to occur there.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Masticophis flagellum ruddocki San Joaquin coachwhip	None/None G5T2T3/S3 SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	Moderate Potential	Low Potential	Moderate Potential	Low Potential – Cantua Substation only No Potential – Los Banos, Gates, and Midway Substations	Areas of potentially suitable scrub and grassland habitat with little or no tree cover occur in the Scenario 1 and Scenario 3 study areas where they intersect undeveloped remnants of the Ciervo Hills east of I-5 and the Big Blue Hills. The species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas. Additionally, this species has been recorded on a limited number of occasions on the margins of roads in agricultural areas. The most recent CNDDB occurrence was documented in 2009 approximately 6.5 miles northwest of the northern end of Scenario 1 study area in a disturbed area between an agricultural field and annual grassland. As a result, the species has low potential to occur in the Scenario 2 study area, which is dominated by agricultural land cover, and the Cantua Substation study area, which includes a small portion of agricultural land cover. The species is not expected to occur in the Los Banos, Midway, or Gates substation study areas due to the lack of suitable habitat.
Phrynosoma blainvillii coast horned lizard	None/None G4/S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Moderate Potential	No Potential	Low Potential	No Potential	This species has moderate potential to occur in the Scenario 1 study area where atriplex scrub occurs in the undeveloped remnants of the Ciervo Hills east of I-5 , and a low potential to occur in the annual grasslands in both the Scenario 1 and Scenario 3 study areas. This species is not expected to occur in the Scenario 2 study area or in the substation study areas, which are dominated by agriculture and/or developed land cover and lack suitable habitat for the species. The closest two CNDDB records for this species are from 1986 in the Monvero Residual Dunes of the Ciervo Hills approximately 5 miles west of the Scenario 1 study area.
Thamnophis gigas giant gartersnake	FT/ST G2/S2	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the gartersnakes in California.	No Potential	No Potential	No Potential	No Potential	Suitable streams and freshwater marshes do not occur within the alternative fiber line study areas or substation study areas. Although irrigation ditches occur in the Scenario 1, Scenario 2, and Scenario 3 study areas, they would not hold sufficient water year round for this species.. Only one historical (over 30 years old) CNDDB record resulted from the database query, located over 15 miles east of the three alternative study areas in Fresno Slough and noted as possibly extirpated. This species is not expected to occur.
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	No Potential	No Potential	No Potential	No Potential	Suitable permanent fresh water does not occur within the alternative fiber line study areas or the substation study areas. Only two historical (over 30 years old) CNDDB records of this species resulted from the database query, located over 5 miles west of the utility switchyard in creeks with fast moving water and large pools at over 1,400 feet in elevation. This species is not expected to occur.
Birds							
Agelaius tricolor tricolored blackbird	None/ST G1G2/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Moderate Potential (foraging) Low Potential (nesting)	Moderate Potential (foraging) Low Potential (nesting)	Moderate Potential (foraging) Low Potential (nesting)	Moderate Potential (foraging) – Cantua Substation only Low Potential (nesting) – Cantua Substation only No Potential (foraging, nesting) – Los Banos, Midway, and Gates Substations	A few parcels along the Scenario 1, Scenario 2, and Scenario 3 study areas contain wheat, corn, onion, and tomato fields. These crops may provide suitable vegetative structure for tricolored blackbird nesting; however, they are not typically considered suitable nesting habitat for the species since they are subject to regular disturbance from agricultural equipment and personnel for maintenance and harvest. As a result, there is a low potential for tricolored blackbird to nest in the Scenario 1, Scenario 2, and Scenario 3 study areas. Potentially suitable foraging habitat for tricolored blackbird exists in the agricultural areas of the Scenario 1, Scenario 2, Scenario 3 study areas, and potentially a portion of the Cantua Substation study area. The species has moderate potential to forage in the Scenario 1, Scenario 2, Scenario 3, and Cantua Substation study areas. Tricolored blackbird is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the dominance of developed/disturbed land cover and the lack of suitable nesting and foraging habitat.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Aquila chrysaetos golden eagle	None/None G5/S4 FP	Found in rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	This species was observed flying over the Darden Clean Energy Project PV solar array footprint in May 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). The alternative fiber line study areas and substation study areas are outside the nesting range of this species. This species has high potential to forage in the alternative fiber line study areas and Cantua Substation study area, which contain agricultural land cover. It has no potential to forage in the Los Banos, Midway, or Gates Substations study areas, which are dominated by developed/disturbed land cover.
Asio flammeus short-eared owl	None/None G5/S2 SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	No Potential	No Potential	No Potential	No Potential	Short-eared owls do not breed and nest in Central California. Lowland meadows and swamps do not occur within the alternative fiber line scenario study areas or substation study areas. This species is not expected to occur.
Asio otus long-eared owl	None/None G5/S3? SSC	Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	No Potential	No Potential	No Potential	No Potential	Suitable riparian bottomlands with willows and cottonwoods do not occur in the alternative fiber line study areas or substation study areas. This species is not expected to occur.
Athene cunicularia burrowing owl	None/None G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	High Potential	High Potential	High Potential	High Potential – Cantua Substation No Potential – Los Banos, Midway, and Gates Substations	This species was documented nesting and foraging in the Darden Clean Energy Project PV solar array footprint (as described in the Opt-In Application [IP Darden I and Rincon 2023). Suitable foraging habitat is present in retired and managed agricultural fields, and breeding habitat is present in areas that are not disked along field edges, roads, drainage berms and open pipes in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. Recent CNDDB records of this species document it nesting on the banks of the California Aqueduct and Coalinga Canal, adjacent to agricultural fields. It may also nest and forage in the grassland and scrubland present in the Scenario 1 and Scenario 3 study areas. As a result, this species has high potential to nest and forage in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable nesting and foraging habitat.
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	FD/None G5T3/S3 WL	Winters on lakes and inland prairies. Forages on natural pasture or that cultivated to grain; loafs on lakes, reservoirs, ponds.	No Potential	No Potential	No Potential	No Potential	No lakes or inland prairies are present in the alternative fiber line study areas or substation study areas. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area, which also does not contain natural pasture or grain fields to support foraging for this species. This species is not expected to occur.
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	This species was documented actively foraging in the Darden Clean Energy Project PV solar array footprint in December 2022, as described in the Opt-In Application (IP Darden I and Rincon 2023). Sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats do not occur within the alternative fiber line study areas. However, open agricultural fields suitable for foraging do occur in the Scenario 1, Scenario 2, and Scenario 3 study areas and in the Cantua Substation study area with agricultural land cover, in which the species has high potential to forage and no potential to nest. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. Nesting is not expected in this region; the species breeds in the northern United States and Canada, and winters from California and Texas to Mexico. It is a California winter resident from August to early March.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	High Potential (foraging) No Potential (nesting)	High Potential (foraging) Moderate Potential (nesting)	High Potential (foraging) Moderate Potential (nesting)	High Potential (foraging) – Cantua Substation only Moderate Potential (nesting) – Cantua Substation only No Potential (foraging, nesting) – Los Banos, Midway, and Gates Substations	Agricultural fields suitable for foraging occur in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area; it was documented nesting in groves and lines of trees adjacent to agricultural fields and also foraging in the Darden Clean Energy Project PV solar array footprint as described in the Opt-In Application (IP Darden I and Rincon 2023). Agricultural areas in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area provide potential suitable foraging habitat for this species. Nesting habitat is absent from the Scenario 1 study area and the Los Banos, Midway, and Gates Substations study areas due to the lack of suitable nest trees. Fremont cottonwoods that could potentially support nesting are present in Cantua Creek adjacent to (but outside of) the Cantua Substation study area and only one or two cottonwood trees are present in Cantua Creek where it intersects the Scenario 2 study area. Potentially suitable riparian nest trees are also present in Los Gatos Creek where it intersects the Scenario 2 and Scenario 3 study areas at the same location. As a result, this species has high potential to forage in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. It has no potential to nest in the Scenario 1 study area, but moderate potential to nest in riparian trees in Cantua Creek adjacent to the Cantua Substation study area and in Los Gatos Creek in the Scenario 2 and Scenario 3 study areas, and low potential to nest in Cantua Creek in the Scenario 2 study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging and nesting habitat.
Charadrius montanus mountain plover	None/None G3/S2 SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	Agricultural fields suitable for foraging occur in the Scenario 1, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area with agricultural land cover. This species was documented foraging in the Darden Clean Energy Project PV solar array footprint as described in the Opt-In Application (IP Darden I and Rincon 2023). The species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. Mountain plover are winter residents of California and are not known to breed in the state. As a result, the species is not expected to nest in any of the three alternative fiber line study areas or in the substation study areas.
Charadrius nivosus nivosus western snowy plover	FT/None G3T3/S3 SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	No Potential	No Potential	No Potential	No Potential	No sandy beaches, salt pond levees or shores of large alkaline lakes are present in the three alternative fiber line study areas or substation study areas. The CNDDB record of this species only occurred in the database query results for the Midway Substation study area. This species is not expected to occur.
Circus hudsonius northern harrier	None/None G5/S3 SSC	Occurs from annual grasslands to lodgepole pine and alpine meadow habitats as high as 3,000 m. in elevation. Nests on ground in shrubby vegetation, usually in emergent wetlands or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water.	High Potential (foraging) Moderate Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) Moderate Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	An adult male northern harrier was documented foraging in the Darden Clean Energy Project PV solar array footprint in April 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). The species has high potential to forage in the agricultural areas in the alternative fiber line study areas and the Cantua Substation study area, and in the grassland habitats in the Scenario 1 and Scenario 3 study areas. Grassland areas within the Scenario 1 and Scenario 3 study areas may provide moderately suitable habitat for nesting. The species is not expected to nest in the agricultural areas of the Scenario 1, Scenario 2, or Scenario 3 study areas or the Cantua Substation study area; though grain fields may be present, they are frequently disturbed by agricultural activities during the nesting season. The species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable habitat.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Elanus leucurus white-tailed kite	None/None G5/S3S4 FP	Occurs in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	This species was observed foraging along a canal within the Darden Clean Energy Project PV solar array footprint in May 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). All three alternative fiber line study areas and the Cantua Substation study area contain suitable agricultural land in which the species has high potential to forage. The species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. Suitable nest trees are absent from the three alternative fiber line study areas and the substation study areas, and nesting has not been documented for this species within 10 miles.
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	High Potential	High Potential	High Potential	High Potential – Cantua Substation only No Potential – Los Banos, Midway, and Gates Substations	The Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area have suitable agricultural fields for California horned lark foraging and open bare ground for nesting at the margins of agricultural fields and groves. California horned larks were documented within the Darden Clean Energy Project footprint as described in the Opt-In Application (IP Darden I and Rincon 2023). Also, one 1992 CNDDB record resulted from the database query, located at the terminus of a natural gas pipeline in between an agricultural field and scrub and grassland habitat approximately 0.2 mile east of the Scenario 1 study area. As a result, this species has high potential to forage and nest in the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas, which lack suitable foraging or nesting habitat.
Falco columbarius merlin	None/None G5/S3S4 WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches. Clumps of trees or windbreaks are required for roosting in open country.	Low Potential (foraging) No Potential (nesting)	Low Potential (foraging) No Potential (nesting)	Low Potential (foraging) No Potential (nesting)	Low Potential (foraging) – Cantua Substation No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	The Scenario 1, Scenario 2, and Scenario 3 study areas and Cantua Substation study area contain potentially suitable foraging habitat including agricultural fields and edges of grasslands; however, no suitable nesting habitat is present. The only CNDDB occurrence resulting from the database query is from 2005 along the banks of the California Aqueduct approximately 5 miles northeast of the Gates Substation. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable nesting and foraging habitat.
Falco mexicanus prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	Potentially suitable foraging habitat exists for this species throughout the open grasslands, shrublands, and agricultural fields in the Scenario 1, Scenario 2, and Scenario 3 study areas, as well as in the portion of Cantua Substation study area with agricultural land cover. This species was documented foraging in the Darden Clean Energy Project footprint in December 2022 and April 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). As a result, it has high potential to forage in the Scenario 1, Scenario 2, and Scenario 3 study areas, and in the Cantua Substation study area. The species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to the dominance of developed/disturbed land cover and lack of suitable foraging habitat. No suitable nesting habitat along cliffs occurs in the alternative fiber line study areas or the substation study areas; therefore, it is not expected to nest within any of the three alternative fiber line study areas or substation study areas.
Gymnogyps californianus California condor	FE/SE G1/S2 FP	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	No Potential (nesting) Low Potential (foraging)	No Potential (nesting) Low Potential (foraging)	No Potential (nesting) Low Potential (foraging)	No Potential (nesting) Low Potential (foraging)	The California condor has a small population that relies on captive breeding programs in Southern California. This species is threatened by lead poisoning from ingesting lead bullets from hunter-killed carcasses, as well as ingestion of trash (NatureServe 2024). The alternative fiber line study areas and substation study areas do not provide suitable cliffs for nesting, though they are within the 100-mile foraging range of known populations in the Sierra Nevada, Tehachapi, and Diablo Mountain ranges. The nearest occurrence of this species is more than 10 miles from the alternative fiber line study areas and substation study areas; however, it was evaluated here since it was identified during the USFWS IPaC search.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Haliaeetus leucocephalus bald eagle	FD/SE G5/S3 FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	No Potential	No Potential	No Potential	No Potential	No suitable old growth trees with open branches are present near large water bodies in the alternative fiber line study areas or substation study areas. The CNDDB record of this species only occurred in the database query results for the Los Banos Substation study area. This species is not expected to occur.
Lanius ludovicianus loggerhead shrike	None/None G4/S4 SSC	Inhabits broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	High Potential (foraging) Low Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) No Potential (nesting)	High Potential (foraging) – Cantua Substation only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	This species is often found in open cropland and was documented foraging in the Darden Clean Energy Project PV solar array footprint in December 2022 and February 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). As a result, there is high potential for the species to forage in agricultural areas of the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. No suitable shrub habitat for nesting is present in the Scenario 2 or Scenario 3 study areas or the substation study areas. However, marginally suitable shrub nesting habitat is present in the atriplex scrub in the Scenario 1 study area where it intersects undeveloped fragments of the Ciervo Hills east of I-5. As a result, this species has low potential to nest in the Scenario 1 study area. This species is not expected to occur in the Los Banos, Midway, and Gates Substations study areas due to the lack of suitable nesting and foraging habitat.
Nycticorax nycticorax black-crowned night heron	None/None G5/S4	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	No Potential	No Potential	No Potential	No Potential	No suitable trees adjacent to lake margins, mud-bordered bays, or marshy spots are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Plegadis chihi white-faced ibis	None/None G5/S3S4 WL	Shallow freshwater marsh. Dense tule thickets for nesting, interspersed with areas of shallow water for foraging.	No Potential	No Potential	No Potential	No Potential	No suitable shallow freshwater marshes with dense tule thickets are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Pooecetes gramineus Oregon vesper sparrow	None/None G5T2/S2 SSC	Winters in California in grasslands and other open areas with low-growing and/or sparse vegetation, including alfalfa and other agricultural fields, stubble fields, and roadsides.	High Potential (wintering)	High Potential (wintering)	High Potential (wintering)	High Potential (wintering) – Cantua Substation only No Potential (wintering) – Los Banos, Midway, and Gates Substations	This species was observed in the Darden Clean Energy Project PV solar array footprint in April 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). Retired and managed agricultural fields in the Scenario 1, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area provide suitable foraging habitat. The species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat. It is a winter resident in California and not expected to nest.
Setophaga petechia yellow warbler	None/None G5/S3 SSC	Associated with riparian plant associations in close proximity to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders, also in open conifer forests.	Moderate Potential (migration)	Moderate Potential (migration)	Moderate Potential (migration)	Moderate Potential (migration) – Cantua Substation only No Potential (migration) – Los Banos, Midway, and Gates Substations	This species was observed in the Darden Clean Energy Project PV solar array footprint in May 2023, as described in the Opt-In Application (IP Darden I and Rincon 2023). There is no suitable woodland/shrub nesting habitat in the three alternative fiber line study areas or in the developed substation study areas. Fremont cottonwood woodland is present in Cantua Creek that passes through the Cantua Substation study area; however, the trees themselves are is outside the substation study area, though they define the relatively open vegetation community in this portion of Cantua Creek. The portion of this community in the Cantua Substation study area is relatively open with low shrub and herbaceous cover that in some years appears to be absent, presumably dependent on flow regime. Cantua Creek also does not appear to carry surface water flow year-round. As a result, there is no suitable nesting habitat in the Cantua Substation study area.
Toxostoma lecontei Le Conte's thrasher	None/None G4/S3 SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	Low Potential	No Potential	No Potential	No Potential	Marginally suitable scrub habitat for this species occurs in the Scenario 1 study area where it intersects undeveloped fragments of the Ciervo Hills east of I-5. As a result, it has low potential to nest and forage in the Scenario 1 study area. The species is not expected to nest or forage in the Scenario 2 or Scenario 3 study areas or in the substation study areas, due to the lack of suitable scrub habitat. Only one historical (1934) CNDDB occurrence resulted from the database query, located approximately 8.5 miles west of the Gates Substation.
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S3	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	No Potential	No Potential	No Potential	No Potential	No suitable riparian habitat is present in the three alternative fiber line study areas or substation study areas, nor are they located in Southern California. The CNDDB record of this species only occurred in the database query results for the Midway Substation study area. This species is not expected to occur.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Xanthocephalus xanthocephalus yellow-headed blackbird	None/None G5/S3 SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.	Moderate Potential (foraging) No Potential (nesting)	Moderate Potential (foraging) No Potential (nesting)	Moderate Potential (foraging) No Potential (nesting)	Moderate Potential (foraging) – Cantua Substation Only No Potential (foraging) – Los Banos, Midway, and Gates Substations No Potential (nesting) – all substations	Agricultural areas within the Scenario 1, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area provide potentially suitable foraging habitat. No suitable foraging habitat is present in the Los Banos, Midway, or Gates Substations study areas, which are dominated by developed/disturbed land cover. Accounts from eBird document yellow-headed blackbird colonies consisting of 5, 10, and 24 individuals in a roadside "pond" within 5 miles northwest of the Scenario 2 study area. These records were from 2012 and 2016, including a June 2016 observation of nine fledglings. However, no suitable freshwater emergent wetlands are present within the alternative fiber line study areas or in the substation study areas to support nesting. As a result, this species has moderate potential to forage and no potential to nest in the Scenario 1, Scenario 2, and Scenario 3 study areas, and the Cantua Substation study area. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable foraging and nesting habitat.
Mammals							
Ammospermophilus nelsoni Nelson's (=San Joaquin) antelope squirrel	None/ST G2G3/S3	Occurs in Western San Joaquin Valley from 200-1200 feet elevation. Uses dry, sparsely vegetated areas with a variety of soils suitable for digging. Digs burrows or uses kangaroo rat or other small mammal burrows. Needs widely scattered shrubs, forbs, and grasses in broken terrain, often with gullies and washes.	Moderate Potential	No Potential	Moderate Potential	No Potential	Potentially suitable scrub and grassland habitat occurs in remnant fragments of the Ciervo Hills east of I-5 where they are intersected by the Scenario 1 study area. Marginally suitable habitat is present in the grassland dominated areas of the Scenario 3 study area. The majority of CNDDB occurrences in the vicinity of the Scenario 1 and Scenario 3 study areas are historical (greater than 30 years old) and primarily west of I-5 in the Ciervo Hills west of the Scenario 1 study area. One 2017 CNDDB record is located on the north side of Arroyo Hondo in the Ciervo Hills west of I-5 and approximately 2.15 miles west of the Scenario 1 study area. As a result, this species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas in the scrub and grassland habitats. No suitable shrub, forb, or grassland habitat is present in the Scenario 2 study area or in the substation study areas; as a result, the species is not expected to occur in the Scenario 2 study area or substation study areas.
Antrozous pallidus pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	No Potential	No Potential	No Potential	No Potential	Fragmented areas of marginally suitable foraging habitat occur within the three alternative scenario study areas. However, no suitable roosting habitat is present in or near the alternative fiber line study areas or substation study areas. Only one historical 1945 CNDDB record resulted from the database query, located over 10 miles west of the Scenario 1 study area in the Ciervo Hills. This species is not expected to occur.
Corynorhinus townsendii Townsend's big-eared bat	None/None G4/S2 SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites, typically coniferous or deciduous forests. Roosts in the open, hanging from walls and ceilings in caves, lava tubes, bridges, and buildings. This species is extremely sensitive to human disturbance.	No Potential	No Potential	No Potential	No Potential	No suitable roosting sites are present in the three alternative fiber line study areas or four substation study areas. This species is not expected to occur.
Dipodomys ingens giant kangaroo rat	FE/SE G1G2/S2	Found in annual grasslands on the western side of the San Joaquin Valley. Occasionally occurs in alkali scrub. Prefers areas with sparse cover, can be found in areas of cattle grazing. Requires level or slightly sloping terrain and friable soils for burrowing.	Moderate Potential	No Potential	Moderate Potential	No Potential	Marginally suitable scrub and annual grassland habitat occur within the Scenario 1 and Scenario 3 study areas where they intersect the undeveloped Big Blue Hills and remnant portions of the Ciervo Hills east of I-5. The portion of the Scenario 3 study area that includes grassland habitat in the Big Blue Hills and Ciervo Hills generally has high topographic relief and dense annual grassland vegetation with few shrubs for cover. However, the Scenario 3 study area includes a dirt access road along the transmission corridor and also intersects areas showing signs of past cattle crazing, which may have created marginally suitable sparsely vegetated areas. As a result, this species has moderate potential to occur in the Scenario 1 and Scenario 3 study areas. The Scenario 2 study area and substation study areas are dominated by agricultural and/or developed/disturbed land covers, which are regularly disked or maintained and do not offer suitable scrub or grassland habitats. As a result, the species is not expected to occur in the Scenario 2 study area or substation study areas. No recent occurrences of this species have been documented within 10 miles of the alternative fiber line study areas or substation study areas. The majority of CNDDB occurrences are historical (more than 30 years old) from the Ciervo Hills west of I-5 and west of the Scenario 1 study area; I-5 likely acts as a barrier to movement of any giant kangaroo rat that may still occur in the Ciervo Hills.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Dipodomys nitratoides brevinasus short-nosed kangaroo rat	None/None G3T1T2/S1S2 SSC	Occurs along the western side of San Joaquin Valley in grassland and desert shrub associations, especially Atriplex. Can occur in highly alkaline soils among others, require friable soils for burrowing. Favors flat to gently sloping terrain.	Moderate Potential	No Potential	Low Potential	No Potential	Potentially suitable scrub habitat occurs in remnant fragments of the Ciervo Hills east of I-5 where they are intersected by the Scenario 1 study area. Marginally suitable habitat is present in the grassland dominated areas of the Scenario 3 study area. As a result, this species has moderate potential to occur in the Scenario 1 study area and low potential to occur in the Scenario 3 study area in the scrub and grassland habitats. No suitable scrub or grassland habitat is present in the Scenario 2 study area or in the substation study areas; as a result, the species is not expected to occur in the Scenario 2 study area or substation study areas. All six CNDDB occurrences resulting from the database query date from before 2000 and are located south of California State Route 198; the most recent is from 1999 approximately 4.4 miles west of the Scenario 3 study area on the west side of I-5.
Dipodomys nitratoides exilis Fresno kangaroo rat	FE/SE G3TH/SH	Alkali sink-open grassland habitats in western Fresno County. Bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs and grasses.	Low Potential	No Potential	Low Potential	No Potential	Areas of marginally suitable grassland habitat occur within the Scenario 1 and Scenario 3 study areas, where this species has low potential to occur. However, bare alkaline clay-based soils subject to inundation are absent in the grassland areas. The species is not expected to occur in the Scenario 2 study area or the substation study areas due to the dominance of agriculture and developed/disturbed land cover. All CNDDB occurrences resulting from the database query historic (more than 30 years old of positive identification of species) and are over 15 miles east of the three alternative scenario study areas, on the east side of the California Aqueduct, which likely acts as a barrier to movement.
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE G3T1T2/S2	Found in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils for burrowing which do not experience seasonal flooding. Often digs burrows in elevated mounds, including the base of shrubs in densely vegetated areas.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and the Los Banos, Cantua, and Gates Substations are located over 10 miles northwest of the Tulare Lake Basin and separated from it by the California Aqueduct. The Midway Substation is located over 10 miles southeast of the Tulare Lake Basin. This species is not expected to occur.
Eumops perotis californicus western mastiff bat	None/None G4G5T4/S3S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	No Potential	Low Potential	Low Potential	No Potential	Fragmented areas of potentially suitable foraging habitat occur within the three alternative scenario study areas. One historical 1992 CNDDB occurrence of this species is located in Los Gatos Creek 2.5 miles downstream (northeast) of the Scenario 2 and Scenario 3 study areas; however, the occurrence details identify that the record is west of Coalinga, which contradicts its latitude and longitude mapped location. It is possible the mapped location of this record is inaccurate. Given the presence of tamarisk thickets in Los Gatos Creek where it intersects the Scenario 2 and Scenario 3 study areas, this species has low potential to occur there. The species is not expected to occur in the Scenario 1 study area or in the substation study areas due to the lack of suitable habitat.
Lasiurus frantzii western red bat	None/None G4/S3 SSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Low Potential	Low Potential	Low Potential	Low Potential	While the alternative fiber line study areas and Cantua Substation study area may provide suitable foraging habitat for the species, roosting habitat is limited. Only one 1999 CNDDB record for this species resulted from the database query located over 10 miles east near Fresno Slough and the Mendota River Wildlife Refuge and San Joaquin River edge. As a result, this species has low potential to forage and roost in the alternative fiber line study areas and Cantua Substation study area. It is not expected to occur in the Los Banos, Gates, or Midway Substation study areas.
Onychomys torridus tularensis Tulare grasshopper mouse	None/None G5T1T2/S1S2 SSC	Hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Diet almost exclusively composed of arthropods, therefore needs abundant supply of insects.	Moderate Potential	No Potential	Low Potential	No Potential	Potentially suitable scrub habitat occurs in the Scenario 1 study area where it intersects remnant fragments of the Ciervo Hills on the east side of I-5. This species was most recently recorded in the CNDDB in 2019 approximately 0.4 mile southwest of the Scenario 1 study area; the record is located along the west side of I-5, which likely acts as a barrier to significant wildlife movement. As a result, this species has moderate potential to occur in the Scenario 1 study area. This species has low potential to occur in the Scenario 3 study area, which is dominated by annual grassland. It is not expected to occur in the Scenario 2 study area or in the substation study areas, which are dominated by agriculture and developed/disturbed land cover.
Sorex ornatus relictus Buena Vista Lake ornate shrew	FE/None G5T1/S1 SSC	Marshlands and riparian areas in the Tulare Basin. Prefers moist soil. Uses stumps, logs and litter for cover.	No Potential	No Potential	No Potential	No Potential	The three alternative fiber line study areas and substation study areas do not contain marshlands or riparian areas in the Tulare Basin. The CNDDB record of this species only occurred in the database query results for the Midway Substation study area. This species is not expected to occur.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	High Potential	High Potential	High Potential	High Potential – Cantua Substation only No Potential – Los Banos, Midway, and Gates Substations	The Scenario 1, Scenario 2, and Scenario 3 study areas and a portion of the Cantua Substation study area contain suitable friable soils and presence of suitable prey species in the areas dominated by agriculture. This species' oblong burrows with characteristic claw marks were observed in the Darden Clean Energy Project PV solar array footprint in December 2022, as described in the Opt-In Application (IP Darden I and Rincon 2023). As a result, American badger has high potential to occur in the agricultural areas of the Scenario 1, Scenario 2, and Scenario 3 study areas and the Cantua Substation study areas, particularly along road and field edges with friable soils. The species has moderate potential to occur in the grassland and scrub habitats of the Scenario 1 and Scenario 3 study areas. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to lack of suitable habitat.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST G4T2/S3	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	Moderate Potential	Low Potential	Moderate Potential	Low Potential – Cantua Substation only No Potential – Los Banos, Midway, and Gates Substations	Areas of potentially suitable chenopod scrub (Scenario 1 study area) and grassland habitat (Scenario 1 and Scenario 3 study areas) with friable soils are present. The majority of the CNDDB records resulting from the database query near the Scenario 1 and Scenario 3 study areas are from the 1970s and 1980s. This species has moderate potential to occur in the scrub and grassland habitats and low potential to occur in the agricultural areas in the Scenario 1 and Scenario 3 study areas. It has low potential to occur in the Scenario 2 study area, which is dominated almost exclusively by agriculture, and the portion of the Cantua Substation study area with agriculture. The species may transit through agricultural areas of the Scenario 1, Scenario 2, and Scenario 3 study areas, and the Cantua Substation study area occasionally, but is not expected to den. It is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to the lack of suitable habitat.
Sensitive Natural Communities							
Alkali Seep	None/None G3/S2.1	Seeps, Springs	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the Los Banos and Midway Substations study areas.
Cismontane Alkali Marsh	None/None G1/S1.1	Marsh	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the Los Banos Substation study area.
Coastal and Valley Freshwater Marsh	None/None G3/S2.1	Freshwater marsh	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and Cantua and Gates Substations study areas.
Great Valley Cottonwood Riparian Forest	None/None G2/S2.1	Riparian forest	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the Los Banos Substation study area.
Great Valley Mesquite Scrub	None/None G1/S1.1	Riparian scrub	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and the Cantua, Gates, and Midway Substations study areas.
Monvero Residual Dunes	None/None G1/S1.2	Interior dunes	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and Cantua and Gates Substations study areas.
North Central Coast Drainage Sacramento Sucker/Roach River	None/None GNR/SNR	River	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and Cantua and Gates Substations study areas.
Northern Claypan Vernal Pool	None/None G1/S1.1	Vernal pool; Wetlands	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and Cantua and Gates Substations study areas.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Alternative Scenario Study Areas Scenario 1 Fiber Line	Scenario 2 Fiber Line	Scenario 3 Fiber Line	Developed Substations	Habitat Suitability/Observations
Northern Vernal Pool	None/None G2/S2.1	Vernal pool; Wetlands	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and Cantua and Gates Substations study areas.
Sycamore Alluvial Woodland	None/None G1/S1.1	Gullies, intermittent streams, springs, seeps, stream banks, and terraces adjacent to floodplains that are subject to high-intensity flooding. Soils are rocky or cobbly alluvium with permanent moisture at depth.	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the Los Banos Substation study area.
Valley Needlegrass Grassland	None/None G3/S3.1	Grassland	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the three alternative fiber line study areas and Los Banos, Cantua, and Gates Substations study areas.
Valley Sacaton Grassland	None/None G1/S1.1	Grassland	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the Los Banos Substation study area.
Valley Saltbush Scrub	None/None G2/S2.1	Scrub	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas. The CNDDB record of this sensitive vegetation community only occurred in the database query results for the Midway Substation study area.
Valley Sink Scrub	None/None G1/S1.1	Scrub	Not Present	Not Present	Not Present	Not Present	Not present within the three alternative fiber line study areas or substation study areas.

Status (Federal/State)
FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

Other Statuses
G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery
Additional notations may be provided as follows
T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

California Native Plant Society California Rare Plant Rank (CRPR)
1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere
3 = Need more information (Review List)
4 = Limited Distribution (Watch List)
CRPR Threat Code Extension
.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Appendix D

Representative Site Photographs

Photograph 1. Photo Point 1. View of Gates Substation taken on June 25, 2024, facing southwest.

Photograph 2. Photo Point 2. View of pistachio orchard along PG&E's 230 kV transmission line corridor (Scenarios 2 and 3) taken on June 25, 2024, facing west.

Photograph 3. Photo Point 3. View of PG&E's 230 kV transmission line corridor (Scenarios 2 and 3) taken on June 25, 2024, facing west.

Photograph 4. Photo Point 4. View of PG&E's 230 kV transmission line corridor (Scenario 2) crossing Hwy 198 taken June 25, 2024 facing east.

Photograph 5. Photo Point 5. View of young orchard adjacent to PG&E's 230 kV transmission line corridor (Scenarios 2 and 3) taken on June 24, 2024, facing northeast.

Photograph 6. Photo Point 6. View of pomegranate orchard adjacent to PG&E's 230 kV transmission line corridor (Scenarios 2 and 3) taken on June 25, 2024, facing west.

Photograph 7. Photo Point 7. View of PG&E's 230 kV transmission line corridor (Scenario 2) adjacent to pistachio orchards taken on June 25, 2024, facing west.

Photograph 8. Photo Point 8. View of PG&E's 230 kV transmission line corridor (Scenario 2) along Hwy 145 taken June 25, 2024, facing northwest.

Photograph 9. Photo Point 9. View of naturalized drainage ditch crossing PG&E's 230 kV transmission line corridor (Scenario 2) taken on June 25, 2024, facing west southwest.

Photograph 10. Photo Point 10. View of dried riparian vegetation and creek bed crossing PG&E's 230 kV transmission line corridor (Scenario 2) taken on June 25, 2024, facing southwest.

Photograph 11. Photo Point 11. View of naturalized irrigation basin on PG&E's 230 kV transmission line corridor (Scenario 2) taken on June 25, 2024, facing west southwest.

Photograph 12. Photo Point 12. View of naturalized drainage ditch crossing PG&E's 230 kV transmission line corridor (Scenario 2) taken on June 25, 2024, facing west southwest.

Photograph 13. Photo Point 13. View of Cantua Creek with adjacent vegetation on PG&E's 230 kV transmission line corridor (Scenario 2) taken on June 25, 2024, facing southwest.

Photograph 14. Photo Point 14. View of naturalized drainage ditch crossing PG&E's 230 kV transmission line corridor (Scenario 1) taken on June 25, 2024, facing east southeast.

Photograph 15. Photo Point 15. View of a dried creek bed with adjacent scrub on PG&E's 230 kV transmission line corridor (Scenario 1) taken on June 25, 2024, facing southwest.

Photograph 16. Photo Point 16. View of California annual grassland with sparse shrubs along PG&E's 230 kV transmission line corridor (Scenario 1) taken on June 25, 2024, facing east.

Photograph 17. Photo Point 17. View of dried California annual grassland near PG&E's 230 kV transmission line corridor (Scenario 1) taken on June 25, 2024, facing north.

Photograph 18. Photo Point 18. View of disked field near PG&E's 230 kV transmission line corridor (Scenario 1) on June 25, 2024, facing southwest.

Photograph 19. Photo Point 19. View of PG&E's 230 kV transmission line corridor (Scenario 3) crossing Hwy 198 adjacent to a pistachio orchard taken on June 25, 2024, facing north.

Photograph 20. Photo Point 20. View of disked field with irrigation equipment under 230 kV transmission line corridor (Scenario 3) taken on June 25, 2024, facing northwest.

Photograph 21. Photo Point 21. View of Asteracea groundcover, a species with potential to be invasive in dry areas, near PG&E's 230 kV transmission line corridor (Scenario 3) taken on June 26, 2024.

Photograph 22. Photo Point 22. View of naturalized drainage ditch crossing PG&E's 230 kV transmission line corridor (Scenario 3) taken on June 26, 2024.

Photograph 23. Photo Point 23. View of naturalized irrigation basin surrounded by weeds and vegetation adjacent to a pistachio orchard near PG&E's 230 kV transmission line corridor (Scenario 3) taken on June 26, 2024.

Photograph 24. Photo Point 24. View of California annual grassland (Scenario 3) taken June 26, 2024, facing north.

Photograph 25. Photo Point 25. View of California annual grassland near PG&E's 230 kV transmission line corridor (Scenario 3) taken June 26, 2024, facing west.

Photograph 26. Photo Point 26. View of disked field under PG&E's 230 kV transmission line corridor (Scenario 3) on June 25, 2024, facing northeast.

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Appendix E

Floral and Faunal Compendium

Plant Species Observed in PG&E Downstream Upgrades Study Areas on June 24-26, 2024

Scientific Name	Common Name	Status (Cal-IPC)	Native or Introduced
Trees			
Populus fremontii	Fremont cottonwood	–	Native
Tamarix sp.	tamarisk	Cal-IPC High	Introduced
Shrubs			
Atriplex lentiformis	big saltbush	–	Native
Atriplex canescans	fourwing saltbush	–	Native
Herbs			
Brassica nigra	black mustard	Cal-IPC Moderate	Introduced
Erigeron canadensis	horseweed	–	Native
Helianthus annuus	common sunflower	–	Native
Salsola tragus	Russian thistle	Cal-IPC Limited	Introduced
Flowering Plants			
Asteracea sp.	–	–	Introduced
Grasses			
Avena barbata	wild oats	Cal-IPC High	Moderate
Bromus madritensis	red brome	Cal-IPC High	Introduced
Schismus sp.	Mediterranean grass	Cal-IPC Limited	Introduced

Cal-IPC = California Invasive Plant Council; N/A = not applicable because these species are native

Sources: Calflora 2024; Cal-IPC 2024

Wildlife Species Observed in PG&E Downstream Upgrades Study Areas on June 24- June 26, 2024

Scientific Name	Common Name	Status	Native, Introduced, or Domesticated
Birds			
Buteo jamaicensis	red-tailed hawk	Common	Native
Charadrius vociferus	killdeer	Common	Native
Corvus brachyrhynchos	American crow	Common	Native
Euphagus cyanocephalus	Brewer's blackbird	Common	Native
Haemorhous mexicanus	house finch	Common	Native
Hirundo rustica	barn swallow	Common	Native
Lanius ludovicianus	loggerhead shrike	Common	Native
Streptopelia decaocto	Eurasian collared dove	Common	Introduced
Turdus migratorius	American robin	Common	Native
Tyrannus verticalis	western kingbird	Common	Native
Zenaida macroura	mourning dove	Common	Native
Mammals			
Canis latrans	coyote	Common	Native
Lepus californicus	black-tailed jack rabbit	Common	Native
Sylvilagus audubonii	cottontail rabbit	Common	Native

Appendix F

Standard PG&E Construction Measures

Aesthetics
Security Lighting • Security lighting will be designed and positioned to minimized casting light and/or glare to off-site locations.
Agricultural and Forestry Resources
Landowner Coordination PG&E will coordinate with landowners prior to construction and during restoration efforts. Measures to be implemented may include, but are not limited to, the following: • Provide notice to landowners outlining construction activities and restoration efforts. • Areas disturbed by construction of the project restored in accordance with lease agreements, applicable operation and maintenance standards, and environmental permit requirements. • In areas containing permanent crops (i.e., grape vines, orchard crops, etc.) that must be removed to gain access to pole sites for construction purposes, PG&E may provide compensation to the farmer and/or landowner in coordination with the landowner.
Air Quality
Fugitive Dust Control The following actions will be taken, as applicable and feasible, to control fugitive dust during construction. SJVAPCD notifications will be made in accordance with any requirements in effect at the time of construction. • Applying water to disturbed areas and to storage stockpiles. • Applying water in sufficient quantities to prevent dust plumes during activities such as clearing & grubbing, backfilling, trenching and other earth moving activities. • Limit vehicle speed to 15 miles per hour. • Load haul trucks with a freeboard (space between top of truck and load) of six inches or greater. • Cover the top of the haul truck load. • When material are transported off site, all material will be covered or wetted to limit visible dust emissions, and at least 6-inches of freeboard space from the top of the container shall be maintained. • Clean-up track-out at least daily. • Minimize unnecessary idling time through application of a “common sense” approach to vehicle use-if a vehicle is not required immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicles use as part of pre-construction conferences. Those briefings will include discussion of a “common sense” approach to vehicle use. • Maintain construction equipment in good working order. • Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 hp or larger and manufactured in 2000 or later will be registered under the California Air Resources Board (CARB) Statewide Portable Equipment Registration Program, or shall meet a minimum US EPA/CARB Tier 1 engine standards.
Biological Resources
Worker Environmental Awareness Training A qualified biologist will develop an environmental awareness training program that is specific to the project. All on-site construction personnel will attend the training before they begin work on the project. Training will include a discussion of the construction management practices that are being implemented to protect biological resources as well as the terms and conditions of any project permits.

Standard Construction Practices

The following standard construction practices will be implemented, as feasible, to reduce the potential for environmental impacts.

- Vehicle parking: vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- Work hours: work will occur only during daylight hours, unless required to occur at night due to line clearances for worker safety.
- Vehicle access: the development of new access and ROW roads will be minimized, and clearing vegetation and blading for temporary vehicle access will be avoided to the extent practicable.
- Speed limit: vehicles will not exceed a speed limit of 15 mph in the ROWs or on unpaved roads within sensitive land-cover types.
- Restoration and erosion control: on completion of any project component, all areas that are significantly disturbed and not necessary for future operations, shall be stabilized to resist erosion, and re-vegetated and re-contoured if necessary, to promote restoration of the area to pre-disturbance conditions.

Dead or injured listed species: personnel will be required to report any accidental death or injury of a listed species or the finding of any dead or injured listed species to a qualified Biologist. Notification of CDFW and/or USFWS of any accidental death or injury of a listed species shall be done in accordance with standard reporting procedures.

Access

- Vehicles and equipment must use pavement, existing roads, and previously disturbed areas to the extent practicable.
- Keep off-road travel, blading, and vegetation clearing to the minimum extent necessary for safe vehicle/equipment access.

Trash

- Place all activity and food-related trash in a covered receptacle and remove from the activity area daily.

Refueling

- No vehicles or heavy equipment will be refueled within 100 feet of a wetland, stream, or other waterway, or within 250 feet of vernal pools, unless secondary containment is used.
- Vehicles will carry adequately stocked spill kits and staff must be trained in their use.
- The fueling operator must always stay with the fueling operation.
- Do not top off tanks.

Waterways

Cleared or pruned vegetation, woody debris (including chips), and lose or exposed soil, must be disposed of in a manner to ensure that these materials do not enter surface water or a water feature.

Wildlife Entrapment

Inspect pipes, culverts and other construction material and equipment for wildlife prior to moving them.

Wildlife Sighting

No wildlife or plant species will be handled or removed from activity areas.

Invasive Species

Clean all vehicles, equipment, clothing, etc. of material potentially containing noxious weeds/seeds prior to entering and existing work locations. Cleaning can be accomplished by brushing, washing, or blowing with compressed air.

Herbicide

Herbicides will be applied in a manner to avoid drift, will be stored and transported in a manner to prevent spilling, and will be applied to target species only. Applications must not be made in, immediately prior to, or immediately following rain.

Special-Status Plants

Prior to the start of ground disturbance activities, a qualified biologist knowledgeable on the identification of rare plant species shall conduct a pre-construction plant survey of areas proposed disturbance and 100-foot buffer (where legally accessible) timed during the appropriate blooming period of the survey season immediately prior to construction to determine if any special-status plant species are present. If special-status plants are identified on-site, their locations shall be mapped and PG&E shall confer with CDFW or USFWS as required by applicable law to facilitate salvage or seed collection.

Blunt-Nosed Leopard Lizard

If qualified biologists determine work areas are located within suitable habitat for blunt-nosed leopard lizard (BNLL), protocol level surveys for the BNLL shall be conducted in accordance with the 2019 CDFW Approved Survey Methodology for the Blunt-Nosed Leopard Lizard no more than one year prior to initiation of work activities to determine the potential for occupancy by BNLL. The survey methods applied shall be commensurate with the anticipated level of disturbance to BNLL habitat.

Temporary work areas which do not require ground disturbance that would result in habitat modification would follow the protocol "Survey for Disturbances for Maintenance Activities" which requires a total of 8-day surveys over the course of the adult active period between April 15 and July 15. A minimum of 3 survey days will be conducted consecutively, with a maximum of 6 survey days completed within any 30-day time period. Fall hatchling surveys will not be required unless conditions or anticipated const

uction methods change. Examples of work activities include grading existing roads or previously disturbed areas, mowing, overland travel, and equipment staging that does not require improvements to existing conditions (pullsites, landing zones, staging areas).

A longer survey effort, "Surveys for Disturbances Leading to Habitat Removal," which includes both spring adult surveys and fall hatchling surveys, will be required for ground disturbing activities anticipated to result in impacts to BNLL habitat. Examples of work activities include establishment of new roads or structures, conversion of land use, and excavations such as those required for underground infrastructure (trenching or boring of underground fiber). Adult BNLL surveys shall be conducted for 12 days over the course of the 90-day adult optimal survey period (April 15 to July 15), with a maximum of 4 survey days per week and 8 survey days within any 30-day time period. At least one survey session should be conducted for 4 consecutive days. In addition to the 12 days of BNLL surveys required for activities in this category, 5 additional survey days are required during the hatchling optimal survey period, with at least 2 survey days conducted between August 15-30 and at least 2 survey days between Sept

mber 15-30, for a total of 17 survey days overall within the same survey season/calendar year.

If surveys indicate that BNLL and appropriate burrow habitat are absent, the construction areas can be fenced using materials and installing temporary wildlife exclusion fencing in compliance with agency specifications to prevent potential occupancy of BNLL in active construction work areas. If BNLL are found within the survey areas, measures to protect the species shall include appropriate signage, monitoring by approved qualified biologists and consultation with the USFWS and the CDFW to develop a BNLL avoidance plan. If burrows are found to be occupied, measures for avoidance and minimization of impact to BNLL shall be written in compliance with recommendations provided during agency consultations and shall contain project specific details. Project actions in areas where BNLL are located shall be restricted to the species' active period (April to early November) to ensure that no aestivating BNLL in burrows are impacted while in their burrows. In conjunction with CDFW or other involved agencies, sensitive areas shall be established and protected with appropriate signage.

San Joaquin Kit Fox, American Badger, Burrowing Owl

No less than 14 days and no more than 30 days prior to the start of ground disturbing activities, a qualified biologist knowledgeable in the identification of all special-status wildlife species shall conduct a pre-construction survey of areas proposed for disturbance within work areas and 500-foot buffer (where

legally accessible) to determine if any special-status species are present. If, as a result of this pre-construction survey it is determined that Burrowing Owl, American Badger or San Joaquin Kit Fox are present, the following measures shall be implemented:

a) If signs of Burrowing Owl or American Badger are identified on-site, appropriate buffers shall be established to limit all construction activities. Buffers for burrows shall be as follows:

Burrowing Owls:

Location	Time of Year	Level of Disturbance		
Nesting Sites	4/1-8/15	200m (Low)	500m (Med)	500m (High)
Nesting Sites	8/16-10/15	200m (Low)	500m (Med)	500m (High)
Nesting Sites	10/16-3/31	50m (Low)	100m (Med)	500m (High)

These burrowing owl active burrow buffers are drawn from CDFW's 2012 burrowing owl staff report, which specifically provides that activities may occur within them if resource managers allow on the basis of existing vegetation, human development, and land use in the area.

If required buffers are infeasible, PG&E shall confer with CDFW to develop a Burrowing Owl and American Badger Exclusion Plan. No relocation or collapsing of burrows or dens will be allowed until the Plan has been reviewed and approved by CDFW. The plan shall be consistent with the recommendations of CDFW's 2012 Staff Report on Burrowing Owl Mitigation and include, at a minimum:

- Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
- Type of scope to be used and appropriate timing of scoping to avoid impacts;
- Occupancy factors to look for and what shall guide determination of vacancy and excavation timing (one-way doors should be left in place for 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape, i.e., look for sign immediately inside the door).
- How the burrow(s) shall be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);

b) If signs of San Joaquin Kit Fox are identified on-site, appropriate buffers shall be established limiting all construction activities. Buffers include (50 feet) for a potential den, (100) feet for a known den and (500) feet for a natal or pupping den, unless otherwise specified by CDFW. If required buffers are not possible to protect the species, then a confer with CDFW will be initiated to determine the need for take authorization through the acquisition of an incidental take permit, pursuant to Fish and Game Code section 2081 subdivision (d).

American Bader/San Joaquin Kit Fox:

- Potential or Atypical den—50 feet
- Known den—100 feet
- Natal or pupping den—500 feet, unless otherwise specified by CDFW

San Joaquin Kit Fox:

In determining whether SJKF activity could occur within these buffers, the biological monitor would take into account the following:

- Noise level and duration. The noise level and duration of activities would be considered. Loud (e.g. greater than 80 decibels) are sustained (e.g. longer than one hour) activities would be disallowed

within the buffer setbacks. Activities with shorter durations and/or lower noise levels may be considered with continual observation of the den by the monitor and work stoppage if the biologist detects evidence of disturbance.

- Level of disturbance typically experienced in the location of the den prior to construction. Some areas (e.g. existing roads or agricultural areas) have been historically subject to human disturbance and dens near these areas are assumed to be accustomed to those previous levels of disturbance. If construction noise and duration are similar to disturbances that would have occurred in the area prior to construction (e.g. vehicular traffic on an existing road), those activities could continue with ongoing monitoring of the den by a biological monitor.
- If construction activities have begun within 100-feet of a potential or atypical den that was determined during pre-construction activities to be inactive when construction began and the den becomes active during construction (i.e., becomes a "known" den), those activities would be allowed to continue at the same intensity as occurred when the den became active. A biological monitor would maintain continual watch on the den while construction activities are conducted within the buffer describe above.
- In no case would construction activities, regardless of noise and duration, occur closer than 50-feet from a known or potential/atypical den or 500 feet from a natal/pupping den unless approved by CDFW or USFWS. Evidence that construction activities were causing negative changes in behavior patterns would cause the biologist to disallow those activities inside the buffer.

Swainson's Hawk

If ground-disturbing activities outside of existing maintenance roads are anticipated to occur during the nesting season for Swainson's hawks (generally March through July), a qualified wildlife biologist will conduct pre-construction surveys within 0.50 miles of such activities that occur within or near suitable breeding habitat for nesting Swainson's hawks. The biologist will also consult with CDFW and species experts to determine if there are any known active Swainson's hawk nests or traditional territories within 0.50 miles of the work areas. If Swainson's hawk nests are identified on-site or within 0.5-miles from work areas, PG&E will confer with CDFW to prepare a Swainson's hawk nesting construction plan. The purpose of this plan would be to identify what level of monitoring would be required, what types of construction activities can occur and what locations within the project site and what avoidance setbacks need to be established, if any, to minimized impacts to an active Swainson's hawk nest.

Le Conte's Thrasher, Golden Eagle, San Joaquin Antelope Squirrel, Coast Horned Lizard and the Tulare Grasshopper Mouse

Within 30-days prior to the start of ground disturbance, a pre-construction survey shall be conducted by a qualified biologist knowledgeable in the identification of all special-status plant and wildlife species identified by the project's CEQA review to have a potential to occur, including Le Conte's thrasher, golden eagle, San Joaquin antelope squirrel, coast horned lizard, and the Tulare grasshopper mouse. Surveys need not be conducted for all areas at one time; they may be phased so that surveys occur within 30-days of the portion of the project site that will be disturbed. The location and nature of all special-status species observations resulting from the pre-construction survey shall be documented and any suitable dens and/or burrows that could support fossorial special-status wildlife species will be examined for potential occupancy and documented. Documentation of completed studies shall be retained and made available to applicable wildlife agency staff on request. Should individuals or active nesting/burrowing sites of the species be present on-site, PG&E shall confer with the appropriate wildlife agency and commence work only once a plan has been established and approved by the applicable agency.

a. A minimum 50-foot no disturbance buffer shall be employed around SJAS burrows. If a minimum 50-foot no disturbance buffer cannot be maintained, then consultation with CDFW is warranted to determine if the work activities can avoid take or if authorization is necessary as described below.
b. If a minimum 50-foot no disturbance buffer for SJAS is not feasible, consultation with CDFW shall occur to discuss how to implement work activities and avoid take. If take cannot be avoided, take authorization through the acquisition of an incidental take permit, pursuant to Fish and Game Code

section 2081 subdivision (d) will be necessary to comply with CESA. c. If Tulare grasshopper mouse or coast horned lizard are observed during surveys, a 50-foot no disturbance buffer shall be installed around burrows where these species are present.
Giant Kangaroo Rat and San Joaquin Antelope Squirrel In the unanticipated event that giant kangaroo rat are discovered on site, the following procedures shall be implemented: Giant kangaroo rat precincts and any SJAS burrows that could be occupied by SJAS shall be flagged and a 50-foot-wide buffer around the precincts shall be avoided by construction equipment and ground disturbing activities, if feasible. If a minimum 50-foot no disturbance buffer is not feasible, consultation with CDFW shall occur to discuss how to implement the work activity and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (d) will be necessary to comply with CESA.
Nesting Bird Surveys Prior to Construction Wherever possible, clearing and grubbing of vegetation will be completed in the non-breeding season preceding construction. If ground-disturbing activities occur during the nesting bird season (February 1-September 15), a qualified biologist shall conduct pre-activity surveys for active nests no more than thirty days prior to the start of ground disturbance to maximize the probability that nests that could potentially be impacted are detected. Surveys shall cover a sufficient area around the work site to identify nests and determine their status. A sufficient area means any area potentially affected by a project. In addition to direct impacts (i.e. nest destruction), noise vibration, odors, and movement of workers or equipment could also affect nests. Prior to initiation of construction activities, a qualified biologist shall conduct a survey to establish a behavioral baseline of all identified nests and confirm site conditions have not changed.
Nesting Bird Monitoring and/or Avoidance Buffers During Construction Once construction begins, a qualified biologist shall continuously monitor nests to detect behavioral changes resulting from the project. If behavioral changes occur, the work causing that change will cease and CDFW may be consulted if necessary for additional avoidance and minimization measures if work must proceed and behavior does not return to the identified baseline condition. If continuous monitoring of identified nests by a qualified biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors shall be implemented. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. A qualified biologist shall advise and support any variance from these buffers.
Cultural and Paleontological Resources
Worker Awareness Training PG&E will provide environmental awareness training on archeological and paleontological resources protection. This training may be administered by the PG&E cultural resources specialist (CRS) or a designee as a stand-alone training or included as part of the overall environmental awareness training as required by the project and will at minimum include: types of cultural resources or fossils that could occur at the project site; types of soils or lithologies in which the cultural resources or fossils could be preserved; procedures that should be followed in the event of a cultural resource, human remain, or fossil discovery; and penalties for disturbing cultural or paleontological resources.
Flag and Avoid Known Resources Sites will be marked with flagging tape, safety fencing, and/or sign designating it as an “environmentally sensitive area” to ensure that PG&E construction crews and heavy equipment will not intrude on these sites during construction. At the discretion of the PG&E CRS, monitoring may be done in lieu of or in addition to flagging. If it is determined that the project cannot avoid impacts on one or more of the sites, then, for those sites that have not been previously evaluated, evaluation for inclusion in the National Register of

Historic Places (NRHP)/California Register of Historic Resources (CRHR) will be conducted. Should the site be found eligible, appropriate measures to reduce the impact to a less-than-significant level will be implemented, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate. If it is determined that sites that have been previously determined to be eligible for inclusion in either the NRHP or CRHR cannot be avoided, measures will be implemented to reduce the impact to a less-than-significant level, including but not limited to data recovery, photographic and archival documentation, or other measures as deemed appropriate.

Unanticipated Cultural Resources and Paleontological Discoveries

a. Unanticipated Cultural Resources.

If unanticipated cultural resources are inadvertently discovered during site preparation or construction activities, work will stop in that area and within 100 feet of the find until CRS or their qualified designee can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with PG&E and other appropriate agencies. Work may continue on other portions of the site with the CRS's approval. PG&E will implement the CRS's or their designee's recommendations for treatment of discovered cultural resources.

b. Human Remains.

In the unlikely event that human remains or suspected human remains are uncovered during pre-construction testing or during construction, all work within 100 feet of the discovery will be halted and redirected to another location. The find will be secured, and the CRS or designated representative will be contacted immediately to inspect the find and determine whether the remains are human. If the remains are not human, the CRS will determine whether the find is an archaeological deposit and whether paragraph (a) of this APM should apply. If the remains are human, the cultural resources specialist will immediately implement the applicable provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the affected county coroner. The coroner has two working days to examine human remains after being notified. If the coroner determines that the remains are Native American, California Health and Safety Code 7050.5 and PRC Section 5097.98 require that the coroner contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC, as required by PRC Section 5097.98, will determine and notify the Most Likely Descendant.

c. Paleontological Discoveries.

If significant paleontological resources are discovered during construction activities, work will stop within 100 feet and the PG&E cultural resource specialist will be contacted immediately. The CRS will work with the qualified paleontologist to evaluate the discovery. If the discovery is determined to be significant, PG&E will implement measures to protect and document the paleontological resource. Work may not resume within 100 feet of the find until approval by the CRS in coordination with the paleontologist. In the event that significant paleontological resources are encountered during the project, protection and recovery (if feasible and safe) of those resources may be required. Treatment and curation of fossils will be conducted in consultation with the landowner, PG&E, and CPUC. The paleontologist will be responsible for developing the recovery strategy and will lead the recovery effort, which will include establishing recovery standards, preparing specimens for identification and preservation, documentation and reporting, and securing a curation agreement from the approved facility.

Geology and Soils

Minimize Construction in Soft or Loose Soils

Where soft or loose soils are encountered during project construction, several actions are available, feasible and can be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, one or more of these actions may be implemented to eliminate impacts from soft or loose soils:

- Locating construction facilities and operations away from areas of soft and loose soil.
- Over-excavating soft or loose soils and replacing them with engineered backfill materials.

- Increasing the density and strength of soft or loose soils through mechanical vibration and/or
- compaction.
- Installing material, such as aggregate rock, steel plates, or timber mats, over access roads.
- Treating soft or loose soils in place with binding or cementing.

Greenhouse Gas Emissions

The following actions will be taken, as feasible, to minimize greenhouse gas emissions.

- Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the project will depend upon the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect
- worker arrival time and the project's construction schedule.
- Minimize unnecessary construction vehicle idling time for on-road and off-road vehicles. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.
- Maintain construction equipment in proper working conditions in accordance with PG&E standards.
- Minimize construction equipment exhaust by using low-emission or electric construction equipment, where feasible. Portable diesel fueled construction equipment with engines 50 horsepower or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program.
- Minimize welding and cutting by using compression of mechanical applications where practical and within standards.
- Encourage use of natural gas-powered vehicles for passenger cars and light-duty trucks where feasible and available.
- Encourage recycling construction waste where feasible.

Hazards and Hazardous Material

Hazardous-Substance Control and Emergency Response

PG&E will implement its hazardous substance control and emergency response procedures to ensure the safety of the public and site workers during construction. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of project construction through operation. They address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on-site. If it is necessary to store chemicals on-site, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on-site, as applicable.

Project construction will involve soil surface blading/leveling, excavation of up to several feet, and augering to a maximum depth of 35 feet in some areas. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities,

the excavated soil will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.

All hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:

- Proper disposal of potentially contaminated soils.
- Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources.
- Emergency response and reporting procedures to address hazardous material spills.

Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.

Worker Environmental Awareness

The training will include the following components related to hazards and hazardous materials:

- PG&E Health, Safety, and Environmental expectations and management structure.
- Applicable regulations.
- Summary of the hazardous substances and materials that may be handled and/or to which workers may be exposed.
- Summary of the primary workplace hazards to which workers may be exposed.
- Overview of the controls identified in the Storm Water Pollution Prevention Plan

Fire Risk Management

PG&E will follow its standard fire risk management procedures, including safe work practices, work permit programs, training, and fire response. Project personnel will be directed to park away from dry vegetation. During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads will have federally approved or State-approved spark arrestors. All off-road vehicles will be equipped with a backpack pump (filled with water) and a shovel. Fire-resistant mats and/or windscreens will be used when welding. In addition, during fire "red flag" conditions (as determined by CalFire), welding will be curtailed. Every fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials will be removed from equipment parking and storage areas.

Hydrology and Water Quality

Prepare and Implement a Storm Water Pollution Prevention Plan (SWPPP)

PG&E will prepare and implement a SWPPP to prevent construction-related erosion and sediments from entering nearby waterways. The SWPPP will include a list of BMPs to be implemented in areas with potential to drain to any water body. BMPs to be part of the project-specific SWPPP may include, but are not limited to, the following control measures.

- Implementing temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, grass buffer strips, high infiltration substrates, grassy swales, and temporary revegetation or other ground cover) to control erosion from disturbed areas.
- Protecting drainage facilities in downstream off-site areas from sediment using appropriate BMPs.
- Protecting the quality of surface water from non-stormwater discharges such as equipment leaks, hazardous materials spills, and discharge of groundwater from dewatering operations.

- Restoring disturbed areas, after project construction is completed, unless otherwise requested by the landowner in agricultural land use areas.

Noise

Employ Noise-Reducing Construction Practices during Temporary Construction Activities

PG&E will employ standard noise-reducing construction practices such as the following:

- Ensure that all equipment is equipped with mufflers that meet or exceed factory new-equipment standards.
- Locate stationary equipment as far as practical from noise-sensitive receptors.
- Limit unnecessary engine idling.
- Limit all construction activity near sensitive receptors to daytime hours unless required for safety or to comply with line clearance requirements. Minimize noise-related disruption by notifying residents. Should nighttime project construction be necessary because of planned clearance restrictions, affected residents will be notified at least 7 days in advance by mail, personal visit, or door hanger, and informed of the expected work schedule.

Transportation

Temporary Traffic Controls

PG&E will obtain any necessary transportation and encroachment permits from Caltrans and the local jurisdictions, as required, including those related to state route crossings and the transport of oversized loads and certain materials, and will comply with permit requirements designed to prevent excessive congestion or traffic hazards during construction. PG&E will develop road and lane closure or width reduction or traffic diversion plans as required by the encroachment permits.

Construction activities that are in or along or that cross local roadways will follow best management practices and local jurisdictional encroachment permit requirements—such as traffic controls in the form of signs, cones, and flaggers—to minimize impacts on traffic and transportation in the project area.

Air Transit Coordination

PG&E will implement the following protocols related to helicopter use during construction and air traffic:

- PG&E will comply with all applicable Federal Aviation Administration (FAA) regulations regarding air traffic within 2 miles of the project alignment.
- PG&E's helicopter operator will coordinate all project helicopter operations with local airports before and during
- project construction.
- Helicopter use and landing zones will be managed to minimize impacts on local residents.

Coordinate Road Closures with Emergency Service Providers

At least 24 hours prior to implementing any road or lane closure, PG&E will coordinate with applicable emergency service providers in the project vicinity. PG&E will provide emergency service providers with information regarding the road or lanes to be closed; the anticipated date, time, and duration of closures; and a contact telephone number.