

DARDEN CLEAN ENERGY PROJECT

Staff Assessment

SCH # 2024091023



CALIFORNIA
ENERGY COMMISSION
Gavin Newsom,
Governor

February 2025
CEC-700-2025-001-SA

DOCKET NUMBER 23-OPT-02

STAFF ASSESSMENT

Darden Clean Energy Project

(23-OPT-02)

Lead Agency

California Energy Commission



February 2025

Table of Contents

1	Executive Summary	1-1
2	Introduction	2-1
3	Project Description	3-1
4	Engineering Evaluation	
4.1	Facility Design	4.1-1
4.2	Facility Reliability	4.2-1
4.3	Transmission System Engineering	4.3-1
4.4	Worker Safety and Fire Protection	4.4-1
5	Environmental Impact Assessment	
5.1	Air Quality	5.1-1
5.2	Biological Resources	5.2-1
5.3	Climate Change and Greenhouse Gas Emissions	5.3-1
5.4	Cultural and Tribal Cultural Resources	5.4-1
5.5	Efficiency and Energy Resources	5.5-1
5.6	Geology, Paleontology, and Minerals	5.6-1
5.7	Hazards, Hazardous Materials/Waste, and Wildfire	5.7-1
5.8	Land Use, Agriculture, and Forestry	5.8-1
5.9	Noise and Vibration	5.9-1
5.10	Public Health	5.10-1
5.11	Socioeconomics	5.11-1
5.12	Solid Waste Management	5.12-1
5.13	Transmission Line Safety and Nuisance	5.13-1
5.14	Transportation	5.14-1
5.15	Visual Resources	5.15-1
5.16	Water Resources	5.16-1
6	Environmental Justice	6-1
7	Public Benefits	7-1
8	Alternatives	8-1
9	Compliance Conditions and Compliance Monitoring Plan	9-1
10	Mandatory Opt-In Requirements	10-1

11 Authors and Reviewers 11-1

Appendix A: Cumulative Scenario

Appendix B: Mailing List

Appendix C: Report of Findings: Net Positive Economic Impacts of Darden Clean Energy Project

Section 1

Executive Summary

1 Executive Summary

Introduction

Pursuant to California Code of Regulations, title 20, section 1877, the California Energy Commission (CEC) staff has prepared a Staff Assessment (SA), which includes a Draft Environmental Impact Report (EIR), to evaluate the potential environmental effects of the construction and operation of the Darden Clean Energy Project (DCEP or project) (23-OPT-02), in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines, the Warren-Alquist State Energy Resources Conservation and Development Act, and California Code of Regulations, title 20, chapter 5, article 4.1 (Opt-In Certification Program). The SA also evaluates whether the construction and operation of the project would conform with all applicable local, state, and federal laws, ordinances, regulations, and standards (LORS).

The applicant is seeking a certification from the CEC to construct and operate the project. The DCEP proposes the construction and operation of a solar photovoltaic (PV) facility, battery energy storage system (BESS), substation, and generation-intertie (gen-tie) line on approximately 9,500 acres in unincorporated Fresno County, California, near the community of Cantua Creek. More complete project details are set forth in

Section 3, Project Description.

The DCEP includes project components that are outside of the CEC's jurisdiction. These components would be subject to California Public Utility Commission (CPUC) jurisdiction. The components include a Pacific Gas and Electric Company (PG&E) utility switchyard that the applicant would construct using PG&E-approved contractors and owned and operated by PG&E. Interconnection of the DCEP into the California Independent System Operator (California ISO) regulated electric grid would require PG&E downstream network upgrades. The SA does not analyze these non-jurisdictional components for conformance with LORS; however, since they are a part of the whole of the action for CEQA, staff has analyzed the potential environmental impacts of these non-jurisdictional project components and recommended mitigation measures for adoption by the licensing authority, as necessary.

Based on the staff's analysis in this document staff recommends the CEC issue a certification for the DCEP allowing for the construction and operation of the project.

1.1 CEC's Project Application Review History

This SA contains CEC staff's independent and objective evaluation of the proposed project and examines engineering, environmental, public health and safety, and environmental justice impacts of the proposed project, and compliance with additional statutory provisions, based on the information provided by the applicant, government agencies, interested parties, independent research, and other sources available at the time the SA was prepared.

On November 9, 2023, the applicant filed its application for the DCEP (CEC docket 23-OPT-02). Consistent with Public Resources Code section 25545.4, CEC staff reviewed the application materials within 30 days and on December 11, 2023, the CEC's Executive Director notified the applicant that the application was incomplete, identifying numerous specific informational deficiencies required under California Code of Regulations, title 20, section 1877. Over the following ten months, the applicant submitted in batches the missing information. On September 19, 2024, staff determined the supplemental information required to complete the application was acceptable and issued a Determination of Completeness signed by CEC's Executive Director.

With the application complete, staff met the procedural requirements of Public Resources Code sections 25545.7.2 and 25545.7.4 by issuing a notice of preparation of an EIR on September 23, 2024, holding an environmental scoping and public informational meeting in Coalinga, Fresno County, on October 16, 2024, and notifying the relevant California Native American tribes of the application and inviting consultation.

1.2 Summary of Engineering Evaluation, Environmental Impact Assessment, Conditions of Certification, and LORS Conformance

Below and throughout the balance of this document, is an overview of the analysis included in **Section 5, Environmental Setting, Environmental Impacts and Mitigation**. Impacts are categorized by the type of impact as follows:

- *No Impact*. The scenario in which no adverse changes to (or impacts on) the environment would be expected.
- *Less Than Significant Impact*. An impact that would not exceed the defined significance criteria or would be eliminated or reduced to a less than significant level through implementation of the applicant's project measures and/or compliance with existing federal, state, and local laws and regulations.
- *Less Than Significant with Mitigation Incorporated*. An impact that would be reduced to a less than significant level through implementation of the identified mitigation requirements.
- *Significant and Unavoidable Impact*. An adverse effect that meets the significance criteria, but there appears to be no feasible mitigation available that would reduce the impact to a less than significant level. In some cases, mitigation may be available to lessen a given impact, but the residual effects of that impact would continue to be significant even after implementation of the mitigation measure(s).

Table 1-1 summarizes the engineering evaluation and environmental impacts and consequences of the project, including mitigation proposed and the project's compliance with laws, ordinances, regulations, and standards (LORS).

TABLE 1-1 SUMMARY OF ENGINEERING EVALUATION AND ENVIRONMENTAL IMPACTS AND LORS COMPLIANCE

Technical Area	Conforms with LORS?	Impacts Mitigated?
Engineering Design		
Efficiency and Energy Resources	Yes	Yes
Facility Design	Yes	N/A
Facility Reliability	N/A	N/A
Transmission System Engineering	Yes	N/A
Worker Safety and Fire Protection	Yes	Yes
Environmental Impact Assessment		
Air Quality	Yes	Yes
Biological Resources	Yes	Yes
Climate Change and Greenhouse Gas Emissions	Yes	Yes
Cultural and Tribal Cultural Resources	Yes	Yes
Geology, Paleontology and Minerals	Yes	Yes
Hazards, Hazardous Materials, and Wildfire	Yes	Yes
Land Use, Agriculture, and Forestry	Yes	Yes
Noise and Vibration	Yes	Yes
Public Health	Yes	Yes
Socioeconomics	Yes	Yes
Solid Waste Management	Yes	Yes
Transmission Line Safety and Nuisance	Yes	Yes
Transportation	Yes	Yes
Visual Resources	Yes	Yes
Water Resources	Yes	Yes
Public Benefits	N/A	N/A
Environmental Justice	Yes	N/A

Note: N/A = not applicable (technical area not subject to CEQA consideration or has no applicable LORS the project must conform with)

1.2.1 Conditions of Certification, Mitigation Measures, Environmental Impact Assessment, and LORS Conformance

All potentially significant impacts of the proposed project would be reduced to less than significant levels with Conditions of Certification (COCs) and Mitigation Measures (MMs) incorporated. The COCs are proposed for the jurisdictional project components and the MMs are recommended for the non-jurisdictional project components. The project would conform with all applicable LORS. The following summarizes staff's conclusions.

Air Quality. *Less Than Significant with Mitigation Incorporated.* With the implementation of COCs, the project would have a less than significant impact on air quality and conform to applicable LORS. The COCs require the project owner to sufficiently reduce nitrogen oxides (NOx) and other criteria pollutants, including fugitive dust, from the construction phase. Staff's proposed COCs are effective and comprehensive for reducing air quality impacts during construction. The COCs related to the operations of the project are required for the stationary sources or the liquid propane gas backup generators to comply with San Joaquin Valley Air Pollution Control

District requirements. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs for fugitive dust control during construction.

Biological Resources. *Less Than Significant with Mitigation Incorporated.* The jurisdictional project components would not have any impact on federal or state listed plants but may impact federal or state listed wildlife and other special-status wildlife species, including Crotch's bumble bee, San Joaquin kit fox, American badger, Swainson's hawk, burrowing owl, as well as other native birds, and migratory birds using the Important Bird Areas and riparian and aquatic features along the Pacific Flyway. With the implementation of staff's proposed COCs, these impacts would be reduced to less than significant and would conform with applicable LORS. The COCs require a biological monitor onsite during all ground-disturbing activities and require measures to avoid, minimize and mitigate potential environmental effects, and provide full mitigation under the California Endangered Species Act for Swainson's hawk and burrowing owl. Additionally, impacts to special-status plants and wildlife from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs.

The MMs include measures to avoid the take of state and/or federally listed or candidate species, including blunt-nosed leopard lizard, burrowing owl, San Joaquin kit fox, and listed plant species. Also included are Western red bat surveys prior to tree removal and measures to reduce impacts to less than significant, if the species is present and a requirement for an onsite biological monitor during all ground-disturbing activities.

Climate Change and Greenhouse Gas Emissions. *Less Than Significant with Mitigation Incorporated.* The project would lead to a net reduction in greenhouse gas emissions across the State's electricity system. With the implementation of staff's proposed COC, the greenhouse gas emissions related to the project would not conflict with any plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases applicable LORS. The COC requires the project owner to demonstrate the project would use refrigerants that comply with the California Air Resources Board Hydrofluorocarbons prohibitions in all onsite cooling/refrigeration/air conditioning units. The project would therefore have less than significant greenhouse gas-related impacts to the environment. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs to reduce emissions from construction.

Cultural and Tribal Cultural Resources. *Less than Significant with Mitigation Incorporated.* There are no recorded historical resources or tribal cultural resources that will be impacted by the project; however, there is a possibility that undocumented archaeological resources might be discovered during construction and that such a

discovery could be a historical resource or tribal cultural resource. With implementation of staff's proposed COCs, the proposed project's impacts on cultural and tribal cultural resources would be less than significant and would conform with applicable LORS. The COCs require implementation of a monitoring program involving appropriately qualified specialists who would observe and manage inadvertent discoveries of historical resources during construction, train the construction workforce in basic identification of historical resources, implement stop-work procedures (if required), and report to the CEC on all activities. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs. The MMs for cultural and tribal cultural resources are consistent with the COCs. They identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CPUC on all activities.

Geology, Paleontology, and Minerals. *Less Than Significant with Mitigation Incorporated.* The impacts of applicable geologic hazards would be mitigated to less than significant through project design and construction, based on the results of a site-specific geotechnical investigation, the California Building Code (applicable LORS), and implementation of staff's proposed COCs. Compliance with Facility Design COCs would protect people and property from geologic hazards and ensure that the project does not increase the risks of geologic hazards. Geologic formations with a high paleontological sensitivity may exist below the project site and could be impacted during proposed project construction. Potential impacts to paleontological resources would be mitigated to less than significant through conformance with applicable LORS and implementation of staff's proposed COCs. Paleontological COCs require training, monitoring, and protection of paleontological resources that may be encountered during ground disturbing activities. Potential impacts to geologic and mineral resources would be less than significant because these resources are not expected to be encountered during project construction. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs for compliance with PG&E standard measures for construction on soft or loose soils and training, monitoring, and protection of paleontological resources.

Hazards, Hazardous Materials/Waste, and Wildfire. *Less than Significant with Mitigation Incorporated.* The impacts associated with the routine transport, use, disposal or accidental release of hazardous materials/waste during construction and operation would be less than significant with the implementation of staff's proposed COCs. The jurisdictional project components have a low potential for wildfire because the solar facility and BESS are not in or near a State Responsibility Area (SRA) or lands classified as a Very High Fire Hazard Severity Zone (VHFHSZ), and implementation of staff's proposed COCs would further mitigate potential wildfire impacts to less than significant.

The COCs require the following: a Hazard Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasure Plan (SPCC); advance approval for changes in hazardous materials; hazardous waste generator identification numbers; site security plans for construction and operation; a Soils Management Plan; procedures for professional staffing, management, and actions in the case of suspected contaminated soil and/or groundwater; and an air quality and water quality sampling plan in case of a container fire at the BESS.

With implementation of staff's proposed COCs, the jurisdictional project components would conform with applicable LORS and the project would have less than significant impacts related to hazards, hazardous materials/waste and wildfire. Additionally, the hazards, hazardous materials/waste and wildfire impacts from the construction and operation of the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs and PG&E standard construction measures. The MMs require a Hazardous Materials Management Plan prior to construction; and Fire Protection and Prevention Programs for construction and operations.

Land Use, Agriculture, and Forestry. *Less than Significant with Mitigation Incorporated.* The project would not divide an established community. The project would lead to the conversion of farmland, including important farmland, but this conversion would be less than significant as it is associated with farmland owned by the Westlands Water District that has been designated for retirement due to the presence of alkaline soils and insufficient water for irrigation. To accommodate the construction and operation of the gen-tie line, the project would be constructed on easements, and agricultural uses would continue outside of the easements. The conversion of farmlands currently under Williamson Act contracts would be less than significant, as linear facilities, such as the generation-intertie lines and the PG&E utility switchyard, are deemed to be compatible with Williamson Act contracts and agricultural preserves. The potential for the project to cause other changes in the existing environment that would result in the conversion of additional farmland or the conversion of forest land to other uses is less than significant. The project would have no impact on forestland or timberland resources, nor would it conflict with land zoned for timberland production.

With implementation of staff's proposed COCs associated with worker safety, hazards, hazardous materials, and wildfire, air quality, and visual resources, construction and operation of the jurisdictional project components would conform to applicable LORS and the project would have less than significant impacts related to land use and zoning. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be less than significant with inclusion of a recommended hazards, hazardous materials/waste and wildfire MM.

Noise and Vibration. *Less Than Significant with Mitigation Incorporated.* Despite the generation of noise louder than ambient levels, such as from helicopters, pile driving, and other construction activities, with the implementation of staff's proposed COCs,

including time restrictions on construction activities, the use of pile driving noise controls, and an occupational noise survey, the project's construction and operation would have a less than significant impact related to noise and vibration and would conform with applicable LORS. The COCs require a noise complaint process, employee noise control program, construction and operational noise restrictions, noise surveys to verify project noise limits are met, and pile driving control techniques. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be less than significant.

Public Health. *Less Than Significant with Mitigation Incorporated.* With the implementation of staff's proposed COCs to minimize personnel and public exposure to Valley fever, the project would have a less than significant impact on public health and the jurisdictional project components would conform to applicable LORS. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of recommended MMs to minimize personnel and public exposure to Valley fever.

Socioeconomics. *Less Than Significant Impact with Mitigation Incorporated.* Construction and operation of the project is unlikely to induce unplanned population growth in the area; the local labor supply within a 60-minute commute of the project site is sufficient to accommodate project-related construction needs, and only 16 permanent staff would be required to operate the proposed project, which would be less than significant. Sufficient temporary housing is available to accommodate construction workers who do not wish to commute daily. Similarly, construction and operation of the project would have a less than significant impact related to the displacement of people or housing. Construction and operation of the jurisdictional components would have a less than significant impact on service ratios and response times for public services following the implementation of staff's proposed COCs associated with socioeconomics; hazards, hazardous materials, and wildlife; transportation; and worker safety. See the summary for Hazards, Hazardous Materials/Waste, and Wildfire; Transportation; and Worker Safety and Fire Protection in this section for details on the COCs. The project would not require new or altered facilities and ensure conformance with LORS. The proposed project would not require additional or expanded recreational facilities. Additionally, impacts associated with the construction and operation of the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be less than significant with incorporation of staff's recommended hazards, hazardous materials/waste, and wildfire MM.

Solid Waste Management. *Less Than Significant with Mitigation Incorporated.* Solid waste produced during project construction and operation would be recycled to the extent possible or otherwise disposed of at certified local landfills with available capacity. This would be reinforced by implementation of the construction waste management plan included in staff's proposed COCs. Therefore, wastes generated by the proposed project, including those sent to landfills, as well as materials handled by third party waste disposal resulting from construction and operation of the project,

would have a less than significant impact and would conform with applicable LORS. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be less than significant with the inclusion of recommended MMs (construction waste management plan).

Transmission Line Safety and Nuisance. *Less Than Significant with Mitigation Incorporated.* With implementation of staff's proposed COCs, potential hazards and impacts to receptors associated with transmission lines and related structures and facilities for the project would have a less than significant impact related to transmission line safety and nuisance and would conform with applicable LORS.

The proposed gen-tie line, which would mainly be within the DCEP's gen-tie line right-of-way, would be maintained according to the standard procedures of the American National Standard Institute/Institute of Electrical and Electronic Engineers guidelines for line safety and field management. The construction and operation of the DCEP's new collector feeders, gen-tie line, on-site substation, and switchyard will not contribute to electromagnetic field (EMF) levels, corona, audible noise, or radio and television interference beyond acceptable standards. On-site worker or public exposure will be short-term and at levels expected for PG&E lines of similar design and current-carrying capacity. Implementing grounding and other field-reducing measures in strict adherence to current utility standards and guidelines will further minimize the potential for nuisance shocks.

With staff's proposed COCs, the safety and nuisance impact from the construction and operation of the proposed substation, switchyard, collector feeders, and the gen-tie line would be less than significant. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of staff's recommended MM which include compliance with CPUC General Orders and Federal Aviation Administration (FAA) regulations for structures 200 feet and above.

Transportation. *Less Than Significant with Mitigation Incorporated.* The project would have a less than significant impact related to transportation and with implementation of staff's proposed COCs, the project would conform with applicable LORS. The COCs require (1) compliance with applicable limitations on vehicle sizes, weights, driver licensing and truck routes, (2) securing permits and licenses for transport of hazardous materials, and (3) the preparation and implementation of a Construction Management Plan. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be less than significant.

Visual Resources. *Less Than Significant with Mitigation Incorporated.* Project components would appear as solid boxy structures and contrast with the existing agricultural fields, row crops, and orchards. Local motorist and residents would have higher viewer sensitivity and the visual character of the site, and its surroundings would moderately change. With the implementation of COCs, the project would have a less

than significant impact related to visual resources and would conform with applicable LORS. The COCs require a Surface Treatment Plan to reduce color contrast and glare. A light pollution control plan or equivalent would also ensure new outdoor light and glare emitted from the project site and construction laydown area would not result in light pollution. Additionally, impacts from the PG&E Utility Switchyard and Downstream Network Upgrades, subject to CPUC permitting, would be reduced to less than significant with the inclusion of staff's recommended MM (Surface Treatment Plan).

Water Resources. *Less Than Significant with Mitigation Incorporated.* By means of a property purchase option agreement, groundwater extracted from onsite wells would be the project water supply for both construction and operations. Impact to project site aquifers would be mitigated by staff's proposed COCs and adherence to Sustainable Groundwater Management Act requirements implemented by the local Groundwater Sustainability Agencies. Impacts due to stormwater runoff would be mitigated by staff's proposed COCs both during construction and operation. Compliance with state and local permit requirements would mitigate potential impacts of an onsite wastewater treatment system. Additionally, impacts from the PG&E utility switchyard and downstream network upgrades, subject to CPUC permitting, would be less than significant with inclusion of staff's recommended MM, which includes measures to manage stormwater pollution prevention during construction and operation.

1.2.2 Engineering Evaluation and LORS Conformance

Facility Design. Staff concludes that the design and construction of the project, including the solar PV facility, BESS facility, and linear facilities would conform with the applicable LORS. In addition, staff-proposed COCs include measures to ensure conformance with applicable LORS.

Efficiency and Energy Resources. Energy consumed by the DCEP during construction and operation would not create significant adverse effects on energy supplies or resources, nor would it consume energy in a wasteful or inefficient manner. Furthermore, through energy-efficient design and increased renewable electricity generation, the project would neither conflict with nor obstruct state or local plans (applicable LORS) for renewable energy or energy efficiency and, therefore, would have no impact on those plans.

Facility Reliability. The DCEP would be built to operate in a manner consistent with industry norms for reliable operation and the solar PV and BESS would be expected to demonstrate an equivalent availability factor of 99 and 98 percent, respectively, which is an acceptable level of availability. The proposed project would perform reliably and would not adversely affect project reliability.

Transmission System Engineering. With implementation of staff's proposed COCs, the project would conform with applicable LORS.

The California ISO reliability and deliverability assessment studies have identified downstream transmission system impacts. These impacts are primarily caused by the DCEP and several other projects in the Cluster 14 Phase II PG&E South area studies. These projects, including the DCEP, are responsible for the identified impacts and the necessary mitigation measures. The system impacts are due to fault duty increases, thermal overload violations, and reactive power deficiencies. The mitigation measures include upgrading area transmission systems and area substation components, newly built looping in-and-out transmission lines, and the PG&E switchyard. **Section 4.3, Transmission System Engineering** summarizes detailed project impacts, system upgrades as mitigation measures, and the COCs required to interconnect the DCEP into the California ISO grid.

Implementing staff's proposed COCs and California ISO's proposed system mitigation measures would reduce the project's impact on the transmission system and conform to applicable LORS.

Worker Safety and Fire Protection. Implementation of staff's proposed COCs, combined with measures identified by the project and compliance with worker safety and fire protection LORS, would mitigate impacts associated with worker safety and fire protection. These impacts include the risk of potential fires at the battery energy storage system. Staff's proposed COCs, which include additional engineering controls, enhanced administrative controls (e.g., annual training, command and control procedures, emergency action plan, reporting of any incidences, preparing a root-cause analysis) combined with the engineering design of the BESS units, would mitigate these risks. With input from the Fresno County Fire Protection District (FCFPD), staff identified both direct and cumulative impacts on emergency response (fire, medical services, and rescue) which would be mitigated by staff's proposed COCs. Additionally, impacts from the PG&E Utility Switchyard and Downstream Network Upgrades, subject to CPUC permitting, would be less than significant with incorporation of staff's recommended MMs.

1.3 Cumulative Scenario

See **Appendix A** of this document for a discussion on the staff's methodology of assessing cumulative impacts and a list of existing and reasonably foreseeable projects staff used to analyze cumulative impacts and a figure showing their location, where possible (see **Table A-1-1** and **Figure A-1** in **Appendix A**).

1.4 Alternatives to the Project

Staff evaluated two alternatives that were found to be potentially feasible and that could avoid or reduce some of the proposed project's potentially significant impacts:

- No Project Alternative
- Reduced Footprint Alternative

The Reduced Footprint Alternative was selected to avoid areas with known habitat for special status species. Only the Reduced Footprint Alternative was determined by staff to avoid or substantially lessen potentially significant effects of the proposed project while achieving the project's basic objectives. As indicated in **Table 8-1**, the smaller construction and operation footprint required for the Reduced Footprint Alternative would result in less severe impacts than the proposed project for the following issue areas: Air Quality; Biological Resources; Cultural and Tribal Resources; Energy Resources; Geology, Paleontology, and Minerals; Hazards, Hazardous Materials, and Wildfire; Land Use, Agriculture, and Forestry Resources; Noise and Vibration; Public Health; Socioeconomics; Solid Waste Management; Transportation; Visual Resources; and Water Resources. The Reduced Footprint Alternative would also be consistent with state and local LORS. The Reduced Footprint Alternative was identified by staff as the CEQA Environmentally Superior Alternative because it would reduce the severity of many of the proposed project's impacts while achieving the basic objectives of the project (see **Table 8-2**).

1.5 Environmental Justice

The following technical areas discuss project-related impacts on environmental justice (EJ) populations: Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials and Wildfire; Noise and Vibration; Public Health; Solid Waste Management; Transportation; Visual Resources; and Water Resources. The project would not result in disproportionate impacts on the EJ populations represented in **Section 6, Environmental Justice, Figure 6-1, Table 6-2 and Table 6-3**.

1.6 Economic and Public Benefits

Public Resources Code section 25545.9 requires that the CEC find that the construction or operation of the facility will have an overall net positive economic benefit to the local government that would have had permitting authority over the site and related facility before CEC may approve a project. The DCEP applicant provided forecasts of gross economic benefits from DCEP construction and operations. As Public Resources Code section 25545.9 requires a net economic analysis, staff estimated gross economic costs to subtract from the gross economic benefits to get net economic benefits. For a more detailed analysis of net benefits to Fresno County, see **Section 10, Mandatory Opt-In Findings**. In summary, DCEP would contribute positive economic, environmental, and electric reliability public benefits to Fresno County, including construction jobs, increased tax revenues, local spending in the community, contributions to renewable and zero-carbon electricity generation, and reliability improvements in the statewide grid. See **Section 7, Public Benefits** for additional information on the economic, environmental, and electric reliability benefits of the project.

Section 2

Introduction

2 Introduction

2.1 Purpose of the Staff Assessment

The purpose of this Staff Assessment (SA) is to provide objective information regarding the project's significant effects on the environment, identify possible ways to minimize the significant effects, describe reasonable alternatives to the project, assess the project's conformance with applicable local, state, and federal laws, ordinances, regulations, and standards, and provide an evaluation of the extent to which the application complies with additional licensing requirements set forth in the Public Resources Code. This information will be considered by the California Energy Commission (CEC) Commissioners in deciding whether to grant a certificate to build and operate the project. The SA is based on information from the applicant, site visits, independent staff research, consultation with other agencies, public comment, and relevant information received during any public meetings, all of which are available through the docket as of the date of the publication of this document.

2.2 Energy Commission Jurisdiction and the Opt-In Certification Program

In 2022, Assembly Bill (AB) 205 established a new Opt-In Certification Program for eligible non-fossil-fueled power plants, energy storage, and manufacturing and assembly facilities to optionally seek certification through the CEC. Upon an applicant filing with the CEC, Public Resources Code sections 25545 and 25545.1 authorize the CEC to certify or approve the construction and operation of the following facilities:

- solar photovoltaic and terrestrial wind energy power plants of 50 MW or more
- energy storage facilities of 200 megawatt-hours (MWh) or more
- the electric transmission lines from these generation and storage facilities to the first point of interconnection with the existing transmission grid
- facilities that manufacture or assemble clean energy or storage technologies or their components with a capital investment of at least \$250 million
- thermal power plants of 50 MW or more that do not use fossil or nuclear fuels
- hydrogen production facility (not derived from fossil fuel feedstock) and associated onsite storage and processing facilities

AB 205 authorizes the CEC to accept applications for these facilities through June 30, 2029, and provides a streamlined process for their review and a decision by the CEC. The CEC is the "lead agency" under the California Environmental Quality Act (CEQA) and is required to prepare an environmental impact report (EIR) for any facility that elects to opt-in to the CEC's jurisdiction. With exceptions, including for the State Water Resources Control Board or applicable regional board, the issuance of a certificate by the CEC for an eligible facility is in lieu of any permit, certificate, or similar document

required by any state, local, or regional agency, or federal agency to the extent permitted by federal law, and supersedes any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law.

This SA consists of a draft environmental impact report following the requirements of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, div. 6, ch. 3) and a separate analysis considering whether the project meets the following statutory requirements:

- (1) The extent to which the applicant has complied with the recommended minimum standards of efficiency adopted under Public Resources Code section 25402(d).
- (2) The conformity of the facility with public safety standards and the applicable air and water quality standards, and with other applicable local, regional, state, and federal standards, ordinances, or laws and a statement of efforts made to correct or eliminate any noncompliance.
- (3) The potential for restoring the site as necessary to protect the environment if the commission denies approval of the application.
- (4) The public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits.
- (5) An identification of whether the site is located at a prohibited area as identified in Public Resources Code sections 25526 and 25527 and any proposed findings relevant to that location.
- (6) The overall net positive economic benefit to the local government that would have had permitting authority over the site and related facility. Economic benefits may include, but are not limited to, employment growth, housing development, infrastructure and environmental improvements, assistance to public schools and education, assistance to public safety agencies and departments, property taxes, and sales and use tax revenues.
- (7) Any legally binding and enforceable agreements by the applicant with, or that benefit, a coalition of one or more community-based organizations, such as workforce development and training organizations, labor unions, social justice advocates, local governmental entities, California Native American tribes, or other organizations that represent community interests, where there is mutual benefit to the parties to the agreement. Concurrent with the publication of the updated Staff Assessment, the executive director shall file a recommendation on whether the commission shall certify the environmental impact report and issue a certificate for construction and operation of the facility.
- (8) For expedited judicial review, the project satisfies the conditions in Chapter 6.5 (commencing with Section 21178) of Division 13, including Sections 21183 and 21183.6, of the Public Resources Code.

The SA is circulated for agency and public review as follows: distribution through the CEQA State Clearinghouse to state agencies, direct mail to local, state and federal agencies, property owners and occupants adjacent to the project site and property owners within 1,000 feet of the project site and 500 feet of project linears, posted to the project's CEC docket, and distributed via email to those on the project's subscription list. The subscription list is an automated CEC system by which information about this proceeding is emailed to persons who have subscribed.

Following the publication of the SA, Public Resources Code, Chapter 6.2, Section 25545.7.6 implements a 60-day public review and comment period on the SA, as well as a requirement that a public workshop be held during this time. For projects staff is recommending approval, comments received during this period, and any changes to the SA, will be incorporated into an Updated Staff Assessment and presented to the CEC at a public business meeting. If the project is approved, a Notice of Determination is filed with the State Clearinghouse.

Jurisdictional and Non-Jurisdictional Project Components

The Darden Clean Energy Project (DCEP) proposes the construction and operation of a photovoltaic facility, battery energy storage system, substation, and generation-intertie line. These project components are within the CEC's certification (i.e., licensing) authority and are considered "jurisdictional" project components. Staff has analyzed these jurisdictional project components as required by CEQA and for conformance with laws, ordinances, regulations, and standards per Warren-Alquist Act requirements. As necessary, staff has included Conditions of Certification relevant to these components, to reduce significant effects on the environment to the extent feasible or ensure conformance with LORS, as part of possible CEC certification.

Interconnection of the DCEP with the California Independent System Operator electrical grid would require the construction and operation of a new utility switchyard. Also, network system upgrades were identified by Pacific Gas and Electric Company (PG&E) as necessary to ensure a reliable connection between the DCEP and the grid. Both the new switchyard, to be owned and operated by PG&E, and the network system upgrades are not within the CEC's licensing authority and are considered "non-jurisdictional." The SA does not analyze these non-jurisdictional components for conformance with LORS; however, since they are a part of the whole of the action for CEQA, staff has analyzed the potential environmental impacts of these non-jurisdictional project components and recommended mitigation measures that can and should be adopted by the licensing authority, as necessary.

2.3 Agency Coordination

CEC staff closely coordinates with other expert agencies to ensure the conditions those agencies would impose on the project if those agencies were issuing permits are incorporated into the CEC's certification.

To facilitate this coordination, staff provided notification of the receipt of the opt-in application to California Department of Fish and Wildlife, State Water Resources Control Board, Regional Water Quality Control Board, Department of Toxic Substances Control and other state, regional, and local agencies (such as County of Fresno Department of Public Works and Planning). Notification of the receipt of the opt-in application was also provided to the California Public Utilities Commission and California Attorney General.

Consistent with California Code of Regulations, Title 14, Section 15082 and Public Resources Code Chapter 6.2, Section 25545.7.2(a), on September 23, 2024, staff issued a Notice of Preparation of a Draft EIR, filing it with the Office of Land Use and Climate Innovation (formally Office of Planning and Research) (State Clearinghouse), responsible and trustee agencies, and the county clerk.

The mailing list used to engage with stakeholder agencies can be found in **Appendix B**.

2.4 Consultation with Tribes

A search of the Native American Heritage Commission's (NAHC's) Sacred Lands File requested by the applicant's consultant was negative. The applicant's consultant sent letters to representatives of three federally recognized tribes and eight non-recognized tribes. Two tribes responded that the project was outside their traditional area while the Tule River Tribe responded that they would defer to the Table Mountain Rancheria.

CEC staff sent letters to California Native American tribes on a NAHC list of tribes identified as having cultural affiliation in the project vicinity and interested in consulting on development projects in the project area. Following receipt of the NAHC response to the CEC solicitation on November 30, 2023, letters were mailed to five tribes on December 21, 2023, and April 26, 2024, consistent with Public Resources Code, Chapter 6.2, Section 25545.7.4. The letters invited the tribes to comment on the proposed project and offered to hold face-to-face consultation meetings if any were requested. On December 11, 2024, the Tachi Yokut Tribe of the Santa Rosa Rancheria telephoned the CEC staff to begin consultation. The CEC staff shared confidential cultural resources information with the Tachi Yokut Tribe. The tribe is considering the provided information and consultation with the CEC is ongoing.

More detail on CEC staff's consultation efforts with California Native American tribes can be found in **Section 5.4, Cultural and Tribal Cultural Resources**.

2.5 Public Outreach and Notification

The CEC's public outreach program is primarily facilitated by the CEC's Office of the Public Advisor, Energy Equity, and Tribal Affairs (PAO+). The PAO+ outreach consisted of email outreach to elected officials, California Native American tribes, community and other organizations, businesses, schools, labor unions and trade associations, community centers, local residents, and others that had previously expressed interest in

being informed of proposed project review and other activities through County events, outreach, and engagement. This is an ongoing process, and efforts are discussed in greater detail in **Section 6, Environmental Justice**.

To initiate public awareness of the project, a summary of the project was published in a newspaper of general circulation in the county of the project site. The summary was published in the Fresno Bee in English and Spanish on December 21, 2023, and posted in English and Spanish at the Cantua Creek Post Office and Leo Cantu Community Center.

Consistent with Public Resources Code, Chapter 6.2, Section 25545.7.2, staff held a Environmental Scoping and Informational Meeting on October 16, 2024 in Coalinga, California and via remote access to solicit input on the application to identify the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in the Draft EIR. As described above, staff distributed a Notice of Availability of the SA (including Draft EIR) to public agencies, property owners and occupants adjacent to the project site and property owners within 1,000 feet of the project site and 500 feet of project linears, and to persons on the project's subscription list. Staff also posted the Notice of Availability and the SA to the project's CEC docket.

A public meeting held after publication of the SA also must be noticed and conducted as close as practicable to the proposed site, consistent with Public Resources Code, Chapter 6.2, Section 25545.7.6(a).

The relevant mailing lists staff used for outreach can be found in **Appendix B**.

2.6 Organization of this Staff Assessment

The SA is prepared to conform to the requirements of CEQA, the CEQA Guidelines (California Code of Regulations, title 14, section 15000 et seq.), the Warren-Alquist Act (Public Resources Code, section 25000 et seq.), and CEC's siting regulations (California Code of Regulations, title 20, sections 1875-1881).

This Staff Assessment is organized into 12 sections, as described below:

- Section 1 Executive Summary. This section provides an overview of the proposed project; the environmental impacts that would result from the proposed project; conditions of certification identified to reduce or eliminate these impacts; a list of cumulative projects (in **Appendix A**); project alternatives; net economic benefits to local government; areas of known controversy; and issues to be resolved.
- Section 2 Introduction. This section describes the CEC's authority and function of the SA; the environmental review process; and the organization of the SA.
- Section 3 Project Description. This section summarizes the proposed project, including the location of the site and project boundaries, characteristics of the proposed project, objectives sought by the proposed project, and intended use of this environmental document.

- Section 4 Engineering Evaluation. This section evaluates the applicant's proposed design criteria, describes the design review and construction inspection process, and establishes conditions of certification that would monitor and ensure compliance with engineering LORS and any other special design requirements. Staff's engineering evaluation is broken down into the following topics:
 - Efficiency and Energy Resources
 - Facility Design
 - Facility Reliability
 - Transmission Line Safety and Nuisance
 - Transmission System Engineering
 - Worker Safety and Fire Protection
- Section 5 Environmental Setting, Environmental Impacts and Mitigation. This section includes the environmental setting (existing conditions); regulatory background; approach to analysis; project-specific and cumulative impacts; and mitigation measures (referred to as Conditions of Certification), when appropriate to reduce potentially significant impacts to less than significant and ensure conformance with LORS. Staff evaluates the potential environmental impacts that might reasonably be anticipated to result from construction and operation of the proposed project. Staff's analysis is broken down into the following environmental resource topics derived from CEQA Appendix G:
 - Air Quality
 - Biological Resources
 - Climate Change and Greenhouse Gas Emissions
 - Cultural and Tribal Cultural Resources
 - Geology, Paleontology, and Minerals
 - Hazards, Hazardous Materials/Waste, and Wildfire
 - Land Use, Agriculture, and Forestry
 - Public Health
 - Socioeconomics
 - Solid Waste Management
 - Transportation
 - Visual Resources
 - Water Resources
- Section 6 Environmental Justice. This section includes an analysis of how the project would potentially impact an Environmental Justice¹ population.
- Section 7 Public Benefits. This section includes a discussion of any public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits.
- Section 8 Alternatives. This section includes a discussion of a reasonable range of alternatives to the proposed project, or to the location of the project, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives. This section also includes an evaluation of the no project alternative.
- Section 9 Compliance Conditions and Compliance Monitoring Plan (Compliance Plan). The Compliance Plan contains the means for ensuring all aspects of construction, operation and closure comply with LORS and with conditions/mitigations adopted by the CEC.

- Section 10 Mandatory Opt-In Regulations. This section includes a discussion of the project's conformance with the mandatory requirements for an Opt-In project.
- Section 11 Authors and Reviewers. This section includes a list of the authors and reviewers for this SA.

Section 3

Project Description

3 Project Description

Project Overview

IP Darden I, LLC and Affiliates¹ (applicant), wholly owned subsidiaries of Intersect Power, LLC, propose to construct, operate, and eventually repower or decommission the Darden Clean Energy Project (DCEP or project) on approximately 9,500 acres in western Fresno County. The project would operate seven days a week, 365 days a year, with an up to 35-year² anticipated lifespan. The primary project components are:

- 1,150 megawatt³ (MW) solar photovoltaic (PV) facility (solar facility)
- Up to 4,600 MW-hour battery energy storage system (BESS)
- 34.5-500 kilovolt (kV) grid step-up substation (step-up substation)
- 15-mile 500 kV generation-intertie (gen-tie) line
- Pacific Gas and Electric Company (PG&E)-owned 500 kV utility switchyard along the existing Los Banos-Midway #2 500 kV transmission line

The applicant had previously proposed an 800 MW green hydrogen facility; however, that component is no longer part of the project (RCI 2024dd).

Non-Jurisdictional Project Components

To interconnect the DCEP to the California Independent System Operator (California ISO) managed electric grid, a PG&E-owned and operated 500 kV utility switchyard along the Los Banos-Midway #2 500 kV transmission line would be required, including a 500 kV loop in and out line. The applicant would retain an approved PG&E contractor to build the switchyard per PG&E standards and then the switchyard would be deeded over to PG&E to operate and maintain. In addition to the new PG&E utility switchyard, the California ISO identified downstream network system upgrades that would be necessary to accommodate power generation from the DCEP. Refer to subsection "3.7, Project Facilities and Design" below for more details.

3.1 Project Title

Darden Clean Energy Project

1 "Affiliates" means IP Darden II, LLC, IP Darden III, LLC, IP Darden IV, LLC, IP Darden V, LLC, IP Darden VI, LLC, IP Darden VII, LLC, IP Darden VIII, LLC, and IP Darden BAAH, LLC. IP Darden I, LLC and Affiliates are indirect subsidiaries of Intersect Power, LLC.

2 After 35 years, the Project would be repowered or decommissioned.

3 1,150 MWac (1,610 MWdc)

3.2 Lead Agency Name and Address

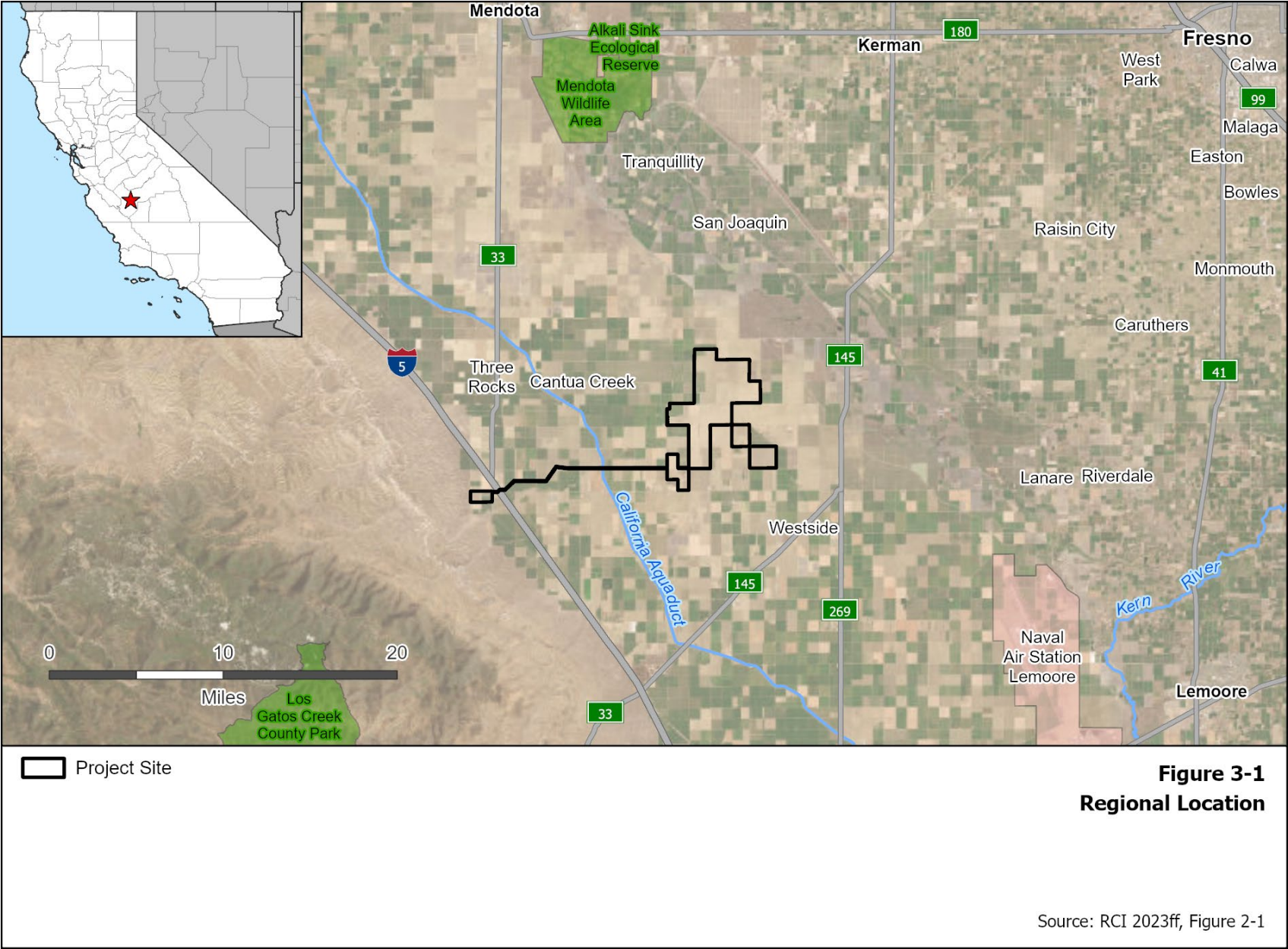
California Energy Commission
715 P Street
Sacramento, California 95814-5512

3.3 Lead Agency Contact Person and Phone Number

Lisa Worrall, Senior Environmental Planner
Siting, Transmission and Environmental Protection Division
California Energy Commission
(916) 661-8367

3.4 Project Location

The project site is on approximately 9,500 acres in an agricultural area of unincorporated Fresno County south of the community of Cantua Creek. The solar facility, BESS, and step-up substation would be on approximately 9,100 acres of land currently owned by Westlands Water District (WWD), between South Sonoma Avenue to the west and South Butte Avenue to the east. The project's gen-tie line (approximately 15 miles long) would span west from the intersection of South Sonoma Avenue and West Harlan Avenue to immediately west of Interstate 5 (I-5), where it would connect to the new utility switchyard along PG&E's Los Banos-Midway #2 500 kV transmission line. **Figure 3-1** shows the regional location and **Figure 3-2** identifies the project vicinity.



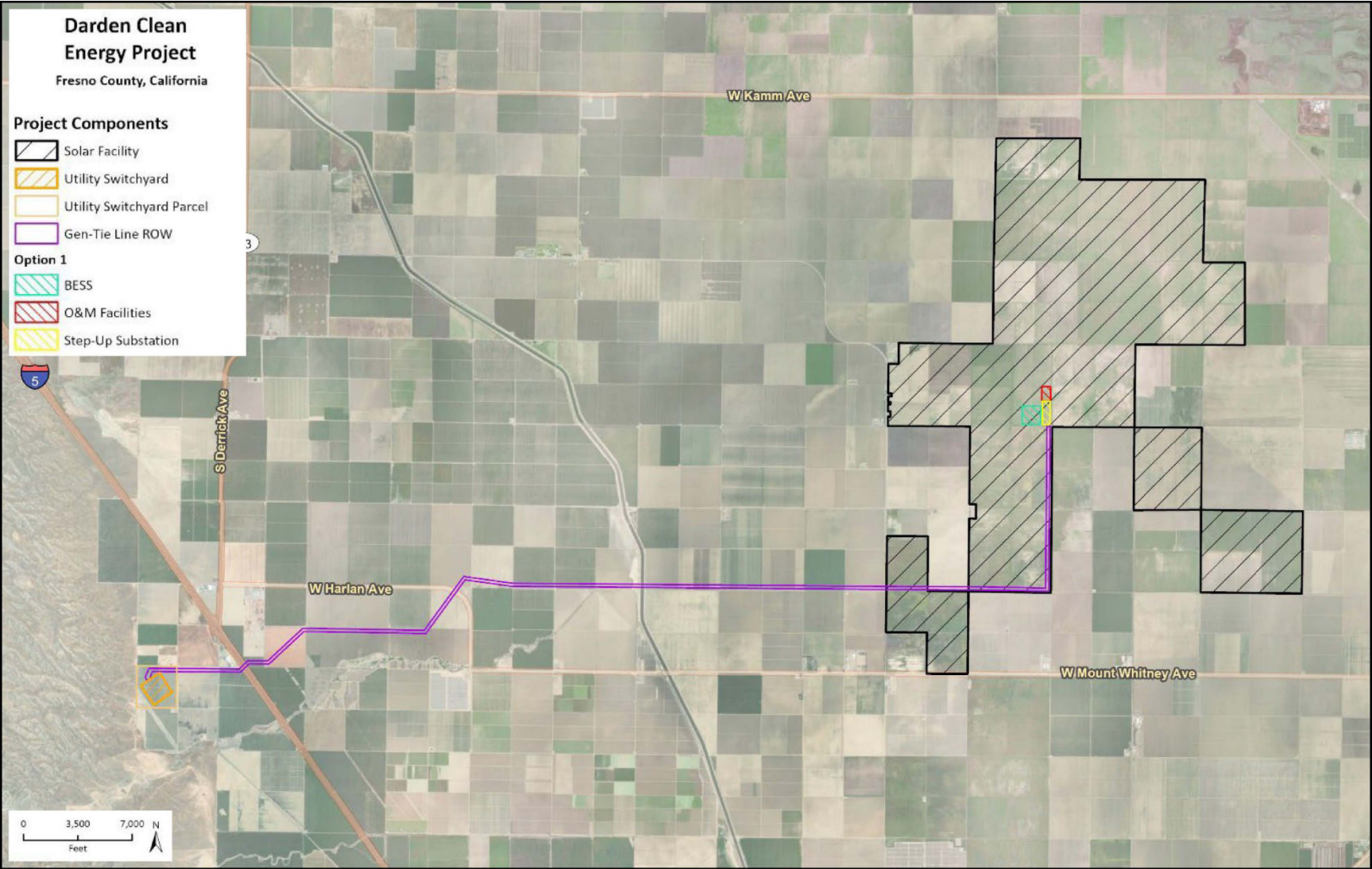


Figure 3-2
Project Site and Componets

Sources: IP 2024n

3.5 Statement of Project Objectives

The objectives for the project include:

- Design, construct, and operate the facility in a manner that respects the local community, its values, and its economy.
- Operate the facility in a manner that protects the safety of on-site staff and off-site members of the public.
- Generate sales tax revenues for Fresno County by establishing a point of sale in the county for the procurement of most major project services and equipment.
- Create temporary and permanent living-wage, union jobs for local and regional residents.
- Generate affordable wholesale electric power to serve the ratepayers of the Fresno County region and the State of California.
- Contribute to addressing the climate crisis by generating renewable energy to displace climate-warming fossil fuel-based generation, and in so doing, helping to create a global climate that is hospitable to future generations and wild places.
- Contribute to meeting the State of California's renewable energy policy objectives as described by the interim targets in Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill (SB) 1020, Laird, Chapter 361, Statute of 2022) to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.
- Assist the nation in meeting its Nationally Determined Contribution commitments under Article 4 of the Paris Climate Agreement to achieve a 50 to 52 percent reduction in United States (U.S.) greenhouse gas pollution (GHG) from 2005 levels by 2030, and to achieve 100 percent carbon pollution-free production in the electricity sector by 2035.
- Given the urgency of the climate crisis, site and rapidly construct a major renewable energy generation facility on contaminated lands that are poorly suited for agricultural use and where the highest and best use is long-term solar energy generation.
- Minimize environmental impacts and land disturbance associated with solar energy development by siting the facility on relatively flat, contiguous lands with low quality habitat, high solar insolation in close proximity to existing roads and established utility corridors.
- Create a new point of interconnection in the Central Valley along California's backbone transmission infrastructure to facilitate this project and future generators helping meet the state's renewable energy goals.
- Contribute to meeting 100 Percent Clean Energy Act of 2018 (SB 100, De León, Chapter 312, Statute of 2018) policy objectives with a 2045 goal of California's

electricity system to be carbon free by capturing and storing renewable energy when it is plentiful and dispatching for use when it is scarce.

- Construct a high-voltage electrical interconnection facility (the switchyard) to enhance the capacity of the transmission system and allow for the delivery of wholesale renewable electricity to the statewide grid, on behalf of the regulated utility.

3.6 Jurisdictional Project Components

3.6.1 Facility Description and Design

Solar Photovoltaic Facility

Solar cells, also called photovoltaic (PV) cells, convert sunlight directly into electricity. PV gets its name from the process of converting light (photons) to electricity (voltage), which is called the “photovoltaic effect.” PV cells are on panels, which are mounted at a fixed angle facing south or on a tracking device that follows the sun. Many solar panels combined together in a row and controlled by tracker motors create one system called a solar sub-array. For large electric utility or industrial applications, hundreds of solar sub-arrays are interconnected to form a utility-scale PV system.

Photovoltaic Panels and Support Structures. The solar facility would include approximately 3,100,000 solar panels. It is anticipated that the panels selected for the project would be First Solar Series 7. The Series 7 panel utilizes First Solar's thin film technology.

The panel mounting system would depend on the market conditions and environmental factors. Either mono-facial or bi-facial panels could be used, and panels would either be mounted in a portrait orientation as single panels or mounted in a landscape orientation and stacked two high on a north-south oriented single-axis tracking system that would track the sun from east to west during the day.

Panels would be arranged in strings with a maximum height of 10 feet at full tilt or slightly higher due to topography or hydrology. Panel faces would be minimally reflective, dark in color, and highly absorptive.

The single axis tracking system would be oriented along a north/south axis with panels facing east in the early morning, lying flat during high noon, and facing west during later afternoon and evening hours.

Spacing between each row would be a minimum of 10 feet. The solar panel array would generate electricity directly from sunlight, which would be collected, converted to alternating current (AC), stored, and delivered to the on-site step-up substation.

Structures supporting the PV panels would consist of steel piles (e.g., cylindrical pipes, H-beams, helical screws, or similar structures). The piles typically would be spaced

18 feet apart. For the tracking system, piles would be installed to a height of approximately four to six feet above grade (minimum one foot clearance between bottom edge of panel and ground but could be higher to compensate for terrain variations and clearance for overland flow during stormwater events).

Inverters, Transformers, and Electrical Collection System. The solar facility would be designed and laid out primarily in sub-arrays of installed rows of panels, ranging in capacity from four to seven MW. Each sub-array would include a direct current (DC) to AC inverter and medium voltage transformer equipment area (i.e., inverter-transformer station) measuring 40 feet by 25 feet. The color of the inverter equipment would be light colored or neutral, depending on thermal requirements and availability from the manufacturer. The inverter-transformer station would be constructed on either a concrete pad or steel skid centrally located within the surrounding rows of panels. Sub-arrays would be designed and sized as appropriate to accommodate the irregular shape of the Project footprint. The precise sub-array dimensions and configuration would be dependent on available technology and market conditions. Each inverter-transformer station would contain an inverter, a transformer, a battery enclosure, and a switchboard.

The inverter-transformer station would contain a security camera at the top of an approximately 20-foot wood or metal pole. If required based on site meteorological conditions, an inverter shade structure would be installed at each inverter-transformer station. The shade structure would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure, if utilized, would extend up to 10 feet above the ground surface.

Panels would be electrically connected into panel strings using wiring secured to the panel racking system. Underground cables would be installed to convey the DC electricity from the panels via combiner boxes or combiner harnesses with a trunk bus system throughout the PV arrays, to inverters that would convert the DC to AC electricity. The output voltage of the inverters would be stepped up to the required collection system voltage at the medium voltage pad mount transformer in close proximity to the inverter. The 34.5 kV level collection cables would be buried underground in a trench about four feet deep, with segments installed overhead on wood poles to connect the solar facility development areas to the on-site step-up substation, which may or may not involve an overhead or underground road crossing. Thermal specifications require 10 feet of spacing between the medium voltage lines, and in some locations closer to the step-up substation interconnection, more than 20 medium voltage AC lines run in parallel.

In locations where the collection system crosses a road or pipelines overhead, direct embedded wood poles would be used on a case-by-case basis. Wood poles spaced up to 250 feet apart could be installed on the site. The typical height of the poles would be approximately 60 to 100 feet, with an embedment depth of 10 to 15 feet depending on the type of crossing, and diameters varying from 12 to 20 inches.

Battery Energy Storage System Facility

BESS facilities can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid. The project would include a battery storage system capable of storing up to 1,150 MW of electricity for four hours (up to 4,600 MW-hour (MWh)), requiring up to 35 acres that would be near the step-up substation. As shown in **Figure 3-2**, the battery system would be near the step-up substation to facilitate interconnection and metering.

The storage system would consist of lithium-ion battery packs housed in electrical enclosures and buried electrical conduit. The Tesla Megapack 2 XL, a lithium iron phosphate (LFP) battery technology, is anticipated to be used for the project (IP 2024n). Approximately 1,220 electrical enclosures measuring approximately 40 feet or 52 feet by 8 feet and 8.5 feet high would be installed on level foundations. The enclosures would be connected to pad mount transformers that step up the battery voltage to medium voltage levels and would connect to the project substation through feeder breakers. The layout of the BESS would entail blocks of four to six battery energy stations surrounded by access roads, with each energy station consisting of two to four battery enclosures and one medium voltage transformer.

Over the life of the project, the storage capacity of the battery cells would naturally degrade, and the project would implement an augmentation strategy to maintain the contractually required capacity of the system. Augmentation would entail either a capacity maintenance approach of adding individual battery units to the existing energy stations or overbuilding the BESS by one to four percent by incorporating additional BESS containers to the system design from the start.

Battery systems would require air conditioners or heat exchangers and inverters. Up to four 15,000-gallon water tanks for emergency use would be installed for the Project with locations based on the BESS layout and design. The size, final number, and location of water tanks for emergency use would be determined in accordance with California Fire Code (CFC) and be reviewed/approved by the local or State Fire Marshal.

The BESS would comply with the current CFC, which governs the code requirements to minimize the risk of fire and life safety hazards specific to BESS used for load shedding, load sharing and other grid services (CFC, ch. 12 § 1206). In accordance with the CFC, the battery enclosure and the site installation design are all required to be approved by the local or State Fire Marshal.

Operations and Maintenance Facility

The project would include an Operations & Maintenance (O&M) facility area on approximately six acres near the step-up substation within the solar facility, which would include one to two O&M buildings to accommodate staff members, storage areas, and parking. The buildings would likely be 65 feet by 80 feet and up to

approximately 10,400 square feet in size. The buildings would be constructed on a concrete foundation and be approximately 15 feet at their tallest point.

Transmission and Interconnection

The project would be interconnected with the regional electrical grid by a new approximately 15-mile 500 kV gen tie-line with a corridor width of up to 275 feet. The final placement of the corridor and poles would be within the easements and based on engineering considerations including geotechnical results and existing infrastructure (roads, agricultural facilities, utilities, etc.). The 500 kV line runs westerly from the project across privately owned lands, across I-5, and into the new utility switchyard, as shown in **Figure 3-2**. **Figure 3-3** shows the proposed gen-tie route and existing transmission lines within one mile of the project. There are no settled areas, parks, recreational areas, or scenic areas within one mile of the project; therefore, these are not shown on the maps. **Section 5.15, Visual Resources** provides photographic simulations of the project.

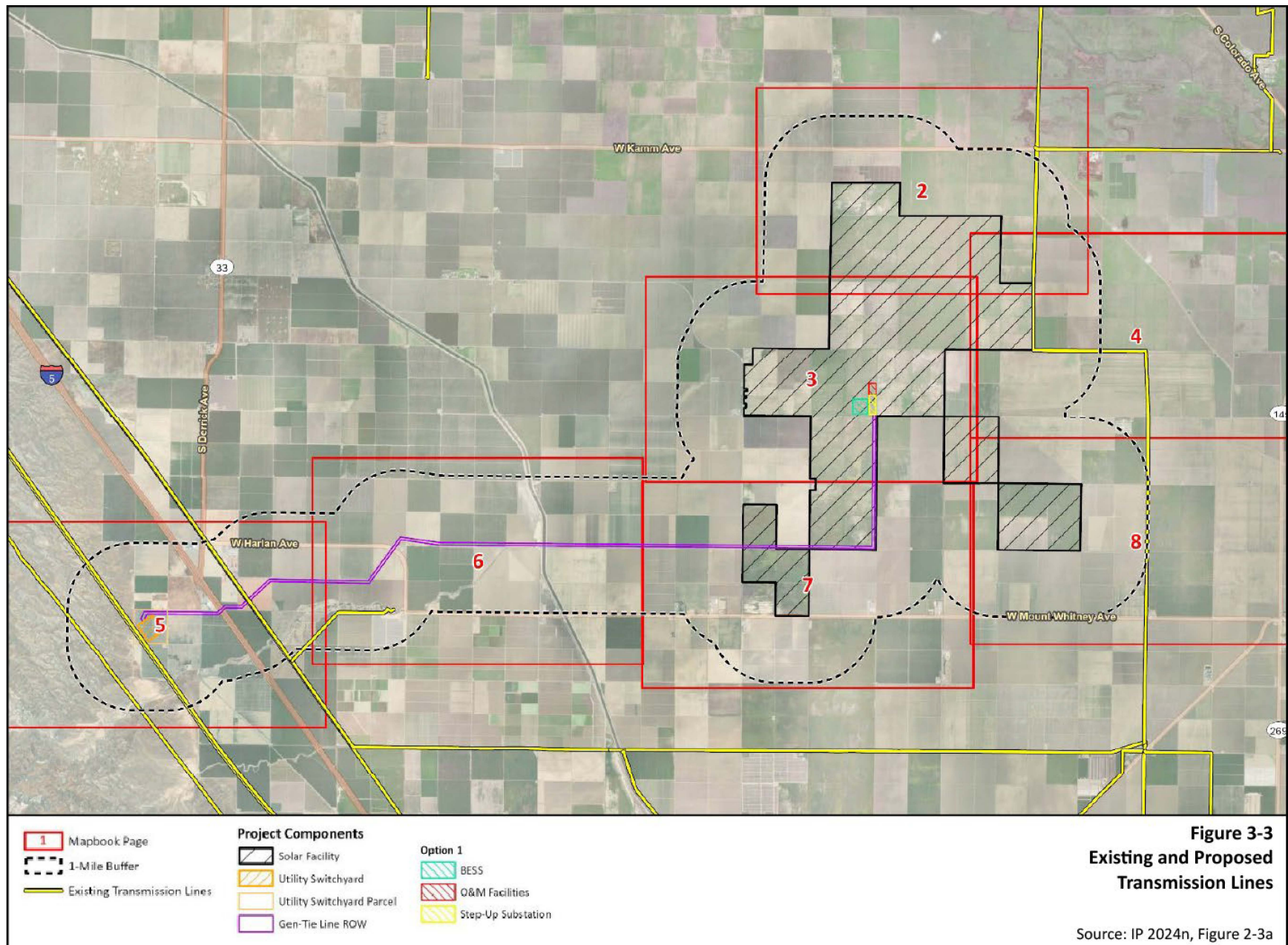
Generation-Intertie Line. The interconnecting 500 kV transmission circuit would consist of a single-circuit configuration constructed overhead. The gen-tie line would be constructed with either monopole tubular steel poles (TSPs) or steel H-frame structures. Gen-tie structures would be at least 120 feet tall, with a maximum height of 200 feet. There would be a total of approximately 80 monopole or H-frame structures, in addition to dead-end structures. The total number of gen-tie structures would be determined by the final design of the gen-tie line. The project transmission facilities would be designed consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC]) where feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with *Reducing Avian Collisions with Power Lines: The State of Art in 2012*.

Step-Up Substation. The step-up substation would step up the medium voltage of the PV collector system from 34.5 kV to 500 kV. The step-up substation would be on approximately 20 acres within the solar facility, as shown in **Figure 3-2**. The step-up substation would terminate the medium voltage solar feeders to several common medium voltage busses and transform the power at these busses to the high voltage required for transmission on the gen-tie line to the utility switchyard.

The internal arrangements for the step-up substation would include:

- Eight power and auxiliary transformers with foundations
- Prefabricated control building(s) to enclose the protection and control equipment, including relays and low voltage switchgear (each building is approximately 20 feet by 80 feet, and 10 to 20 feet high)
- Metering stand
- Capacitor bank(s)

- Nine 500 kV circuit breakers and disconnect switches
- Up to two microwave towers, approximately 18 feet by 18 feet and up to 200 feet tall, mounted with an antenna up to 15 feet in diameter
- Dead-end structure(s) up to 100 feet in height to connect the step-up substation to the grid



3.6.2 Construction Methods and Activities

This section describes construction of the overall project, including the generating facility components and transmission components (including the non-jurisdictional PG&E utility switchyard). Construction of the project is anticipated to take 18 to 36 months to complete. Construction would begin in late 2025 or early 2026 and the project would be operational by 2027 or 2028. The 36-month duration would require a peak workforce of approximately 1,200 and the 18-month duration would require a peak workforce of approximately 1,500. Construction would typically occur Monday through Friday from 6:00 a.m. to 7:00 p.m., but may occur seven days a week if necessary. **Table 3-1** below includes the anticipated construction phases and dates for each of the construction scenarios.

TABLE 3-1 PRELIMINARY CONSTRUCTION SCHEDULE

Phase	18-Month			36-Month		
	Start	End	Days	Start	End	days
Phase 1: Site Preparation	12/31/2025	4/30/2026	90	12/31/2025	7/31/2026	140
Phase 2: PV Panel System	2/28/2026	6/28/2027	320	5/31/2026	6/30/2028	500
Phase 3: Inverters, Transformers, Substation, and Electrical	5/28/2026	3/28/2027	200	5/30/2027	5/30/2028	240
Phase 4: Gen-Tie	1/30/2026	6/30/2026	100	11/30/2027	5/30/2028	120
Phase 5: BESS Facility	10/28/2026	4/28/2027	120	1/30/2028	9/30/2028	160
Phase 7 ¹ : Utility Switchyard	2/28/2026	11/28/2026	180	5/31/2026	3/31/2027	200

Note: 1 Phase 6 has been removed from the project; however, the numbering for the remaining phases has not been changed for ease of reference across other Opt-In Application materials.

The following sections describe the construction methods and activities for the major project components.

Solar Facility and Step-Up Substation

The PV panels would be manufactured at an off-site location and transported to the project site. The steel piles supporting the PV panel arrays would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. Following pile installation, the associated motors, torque tubes, and drivelines (if applicable) would be placed and secured. Some designs allow for PV panels to be secured directly to the torque tubes using appropriate panel clamps. A galvanized metal racking system, which secures the PV panels to the installed foundations, may be field-assembled and attached according to the manufacturer's guidelines.

DC lines from PV sub-arrays would be installed in conduits. The lines would be collected and combined and routed to the inverters to be converted to AC and stepped up to 34.5 kV via a pad mount transformer. Within the sub-arrays this wiring would typically

be hung from the racking equipment. Final sections would be connected to the inverters via an underground stub.

Electrical inverters would be placed on steel skids, elevated as necessary with steel piles to allow for runoff to flow beneath the inverter structures.

Medium-voltage (34.5 kV) cabling from the inverters to the step-up substation would be installed either primarily underground, or overhead along panel strings in a system that would avoid the need for underground cabling and trenching, where required. At the end of panel strings, cables would be combined and routed overhead on wood poles roughly 30 to 50 feet high, depending on voltage. Trenches for the 34.5 kV collector lines would be run from the inverters to the on-site step-up substation.

Underground cables would be installed using direct bury equipment and/or ordinary trenching techniques, which typically include a rubber-tired backhoe excavator or trencher. An underground 34.5 kV line would likely be buried at a minimum of 36 inches below grade but could go as deep as six feet and include horizontal drilling to avoid environmental resources. Shields or trench shoring would be temporarily installed for safety to brace the walls of the trench, if required based on the trench depth. After the excavation, cable rated for direct burial would be installed in the trench, and the excavated soil would be used to fill the trench and compress to 90 to 95 percent maximum dry density or in accordance with final engineering.

The project would achieve a minimum 50-foot buffer to adjacent properties by excluding structural improvements and equipment (excluding fencing) from within 50-feet of the outside boundary of the project site, in accordance with the Fresno County Solar Facility Guidelines. On-site stormwater detention and treatment systems would be designed to limit stormwater-related erosion onto adjacent properties, consistent with County and State Water Resources Control Board requirements and a Pest Management Plan would be implemented to minimize the likelihood of pests (including weeds and rodents) that could impact the project site and adjacent properties.

Construction of the O&M building and distribution line connection would likely be part of the solar facility development in tandem with the PV panel installation. The site of the O&M building would be cleared and graded, followed by installation of a concrete foundation.

Battery Energy Storage System

The BESS must be nearly level; therefore, the proposed BESS area would be cleared and graded. Site preparation would also include construction of drainage components to capture and direct stormwater flows around the BESS facility. Once the concrete foundations are in place for the BESS, the batteries, inverters, and other electrical equipment would be mounted and installed. Equipment would be delivered to the site on trucks.

Generation-Intertie Line

Minimal to no grading is anticipated due to the flat topography of the project area. Clearance and mowing of the gen-tie corridor for construction is not necessary. For the overhead 500 kV line, TSP foundations would be excavated to an average depth of up to 40 feet. Installation would consist of the following basic steps:

- Deliver new poles to installation sites
- Auger new hole using line truck attachment to a depth of up to 40 feet and include concrete supports depending on final engineering
- Pour concrete foundation
- Install bottom pole section by line truck, crane, or helicopter
- Install top pole section(s) by line truck, crane, or helicopter, if required

Once poles are erected, the 500 kV conductor would be strung generally using a wire truck, crane and/or helicopter, splicing rig and puller from conductor pull and tension sites at the end of the power line. Each conductor would be pulled into place at a pre-calculated sag and then tension-clamped to the end of each insulator using sag cat and static truck/tensioner equipment. The sheaves and vibration dampers and accessories would be removed once installation is complete.

Helicopters are anticipated to be used for wire stringing activities including hanging travelers, pulling conductor and optical ground wire, dead-end activities, and the installation of bird diverters. Alternative ground-based construction activities may be utilized as appropriate. There would be one Helicopter Landing Zone (HLZ) in the 20-acre step-up substation laydown yard. A water truck would be on-site to water the HLZ prior to helicopter activities to prevent fugitive dust from rotor wash. Helicopter refueling would be done within the HLZ from a construction vehicle equipped as a fuel truck. Refueling would occur at one of the nearest local airports, between 2 (Five Points Ranch Airport) and 10 miles away (San Joaquin Airport), where the helicopter would be hangered overnight, before and/or after each day the helicopter is utilized. While the helicopter may land briefly within approved, existing disturbed areas on the gen-tie line to pick up equipment, materials, or personnel, no helicopter refueling would occur on private land. Helicopter activities would occur over a temporary two-month period and would occur within the typical construction hours Monday through Friday 6:00 a.m. to 7:00 p.m. A full-time avian monitor would be on-site for the full duration of helicopter activities to specifically monitor helicopter activities.

The helicopter contractor selected for helicopter operations would abide by all requirements in the Helicopter Use Plan prepared for the project. All aircraft, pilots, linemen, and mechanics would be in full compliance with applicable Federal Aviation Administration (FAA) requirements and standards. The helicopter crew would be comprised of a qualified pilot, mechanic, and lineman required for project activities. All linemen would be experienced journeyman lineman and would be Quanta H certified to

perform tasks from the helicopter via Human External Cargo and/or from the helicopter skid. The helicopter contractor would utilize an MD-500 helicopter capable of performing light lift and other construction support operations. The flight crew would utilize very high frequency radios to communicate with the selected airport's common traffic frequency as well as ground crews within the project and HLZs. All helicopters are equipped with geographic positioning system tracking units via Spidertracks, to track helicopter flight paths.

No helicopter use is proposed during routine operations although they may be used for emergency maintenance or repair activities.

3.6.3 Facility Commissioning

Often thought of as the last phase of the construction process, once the site is completely built, the project would go through a commissioning phase that entails energization and testing before full site operation. Commissioning of equipment would include testing, calibration of equipment, and troubleshooting. The step-up substation equipment, inverters, collector system, and PV array systems would be tested prior to commencement of commercial operations. Upon completion of successful testing, the equipment would be energized. The project may go through commissioning in phases as sections are completed. During commissioning, staff members would be driving the site performing energization procedures and troubleshooting errors to ensure the overall health and safety of the site. Typically, heavy equipment and large crews are not needed at this point, unless repairs or part replacements are required.

3.6.4 Facility Operation

Upon commissioning, the project would enter the operation phase. The project would operate seven days a week, 365 days a year. Operational activities at the project site would include:

- Maintaining safe and reliable solar generation
- Site security
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics
- Communicating with customers, transmission system operators, and other entities involved in facility operations

Operations and Maintenance Workforce

During operation of the project, an average of 12 permanent staff associated with the solar facility would be on site daily, with additional staff during intermittent solar panel washing (17 staff), facility maintenance and repairs (four staff), and vegetation management activities (12 staff). Up to four average permanent staff associated with the BESS would be on site daily. Off-duty project operators may be on call to respond

to specific alerts generated by the monitoring equipment at the project site. Security personnel would be on-call. It is anticipated that permanent staff would be recruited from nearby communities in Fresno County. The O&M building would house the security monitoring equipment, including security camera feeds for monitoring the project 24 hours per day. There would be up to three liquid petroleum gas (LPG) emergency backup generators (gensets).

Site Maintenance

The project site maintenance program would be largely conducted during daytime hours. Equipment repairs could take place in the early morning or evening when the facility would be producing the least amount of energy.

Maintenance typically would include the following: panel repairs; panel washing; maintenance of transformers, inverters, energy storage system, and other electrical equipment; road and fence repairs; and vegetation and pest management. The applicant would recondition roads approximately once per year, as needed, such as after a heavy storm event that may cause destabilization or erosion.

Revegetation would be the primary strategy to control dust across the solar facility site. Soil binders would be used to control dust on roads and elsewhere on the solar facility site, as needed. On-site vegetation would be managed to ensure access to all areas of the site, reduce fire risk, and support wildlife habitat.

Solar panels would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers to maintain optimal electricity production. Periodic rainfall may be sufficient to remove light dust layers, which would reduce the manual washing of panels. No chemical agents would be used for typical panel washing; potential non-toxic cleaning solutions may be occasionally used. Guidance from the panel manufacturer would be followed.

O&M vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance and water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement. No helicopter use is proposed during routine operations although they may be used for emergency maintenance or repair activities.

Long-term maintenance schedules would be developed to arrange periodic maintenance and equipment replacement in accordance with manufacturer recommendations. Solar panels are warrantied for 35 years or longer and are expected to have a life of 50 or more years, with a degradation rate of 0.5 percent per year. Moving parts, such as motors and tracking panel drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be performed as necessary.

Drone Use

Drones may be used to perform annual thermal and visual inspections of the gen-tie line and overhead medium voltage collector line structures. The maximum drone operation heights would be restricted to 300 feet, which is higher than the maximum height of the gen-tie line structures.

Annual visual inspections are required by the North American Electric Reliability Corporation FAC-003-4 Transmission Vegetation Management and utilized for preventative maintenance to reduce risk of equipment malfunction or failure. Drone inspections would be performed once per year between September and November to avoid potential impacts to nesting native and migratory birds. A team of two FAA-approved and Unmanned Aircraft System certified pilots would drive a truck on gen-tie line access roads as close to the inspection sites as is safe and feasible, park on the road, and begin the inspection. The drones used would be battery-powered Matrice 300 RTK or Matrice 200 series drones or similar and would perform the inspections between approximately 76-300 feet above ground level. Operating hours for inspections would be between the hours of 10:00 a.m. and 3:00 p.m. The drone pilots would work in pairs with one flying and one spotting for safety. The use of drones for gen-tie infrastructure inspections would minimize the need for larger vehicles, such as bucket trucks, and no ground disturbance would occur during drone use.

3.6.5 Water Supply and Use

Water supply for the project would be sourced from groundwater conferred to the project owner by WWD in connection with the option to purchase the property.

Construction Water

Construction of the project would require approximately 1,100 acre-feet of water. Water demand during construction would primarily be related to dust suppression required for site preparation. Temporary sanitary facilities would be provided during construction and would not require an on-site water supply.

Operational Water and Wastewater Requirements

During operation, the total annual water supply for the project would be approximately 35 acre-feet per year (AFY) as shown in **Table 3-2**. Water demand during operation of the project would be related to: washing the solar panels up to four times per year; providing water for sheep used for vegetation management; supplying O&M facilities; and initial landscaping establishment.

TABLE 3-2 OPERATION WATER DEMANDS	
Water Use	Demand Over 35 years (AFY)¹
PV Panel Washing and Vegetation Management	25
Solar Facility O&M Building and Initial Landscaping Establishment	10
Total	35

Note: 1 Acre-feet per year

Water Treatment

An appropriate size and type of water purification system would be selected for placement within the O&M building to provide potable water for operational workers. The system would be selected based on site specific water quality parameters and may include reverse osmosis, nanofiltration, ion exchange filtration, carbon filtration, and/or ultraviolet treatment. This system would be used exclusively to provide potable water for up to an average of 16 permanent on-site daily staff, including an average of 12 permanent staff associated with the solar facility and four permanent staff associated with the BESS.

3.6.6 Stormwater and Drainage

The project would include construction of solar arrays within the majority of the project site that would be located above grade with a low maintenance mix of native/non-native grassland that would not require substantial supplemental water below the arrays, along with minimal impervious surfaces. The project site has been modeled for site runoff in a 100-year storm event considering soil and landcover type. Project design includes detention basins placed throughout the project site to control the rate and amount of stormwater runoff associated with each drainage area.

3.6.7 Waste Management

Wastes produced at the project site would be collected, treated if necessary, and disposed of. Wastes include process wastewater as well as nonhazardous waste and hazardous waste, both liquid and solid. Waste management is discussed below.

Wastewater Collection, Treatment, and Disposal

During project operation, wastewater production would be associated with permanent toilet and sanitary facilities. Sanitary facilities would either consist of portable sinks and toilets that would be regularly emptied by a permitted provider, or permanent facilities with an Onsite Wastewater Treatment System, subject to oversight and approval by the County of Fresno Public Works and Planning Department, a designated Local Agency Management Program agency under the SWCRB/RWQCBs OWTS program.

No wastewater generated through project operations would be disposed of through discharge directly to open waterbodies.

Solid Nonhazardous Waste

Solid nonhazardous waste would be produced during project construction and operation. Nonhazardous construction wastes would generally include soil, scrap wood, excess concrete, empty containers, scrap metal, insulation, and sanitary waste. Nonhazardous wastes generated during project operation would generally include scrap metal, spent solar panels and transformer components, sanitary waste, and typical refuse generated by workers.

Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Recycling would be in accordance with applicable California state requirements. Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. Other compostable materials, such as non-invasive vegetation, may also be composted off-site.

Non-hazardous construction materials that cannot be reused or recycled would be disposed of at a Class II/III landfill. All contractors and workers would be educated about waste handling, sorting, appropriate recycling storage areas, and how to reduce landfill waste.

Hazardous Waste

Hazardous waste would be produced during project construction and operations. Hazardous construction wastes generally include small amounts of waste oil, solvents, detergents, fuels, oily rags/sorbents, and empty hazardous material containers. Hazardous wastes generated during operations generally include small amounts of waste oil, solvents, detergents, fuels, oily rags/sorbents, and spent batteries.

Several methods would be used to properly manage and dispose of hazardous wastes. In general, hazardous waste and electronic waste would not be placed in a landfill, but rather would be stored on-site for less than 90 days and would be transported to a treatment, storage, and disposal facility by a licensed hazardous waste transporter. Waste lubricating oil would be recovered and recycled by a waste oil recycling contractor. Spent lubrication oil filters would either be recycled or disposed of in a Class I landfill. Chemical cleaning wastes would be temporarily stored on-site in portable tanks or sumps and disposed of off-site by an appropriate contractor in accordance with applicable regulatory requirements.

3.6.8 Management of Hazardous Materials

A variety of chemicals would be stored and used during the construction and operation of the project. The storage, handling, and use of all chemicals would be conducted in accordance with applicable laws, ordinances, regulations, and standards. Chemicals would be stored in appropriate chemical storage facilities. Bulk chemicals would be stored in storage tanks, and most other chemicals would be stored in returnable delivery containers. Chemical storage and chemical feed areas would be designed to contain leaks and spills. Containment pits and drain piping design would allow a full-tank capacity spill without overflowing the containment area. For multiple tanks within the same containment area, the capacity of the largest single tank would determine the volume of the containment area and drain piping with an allowance for rainwater if applicable. Drain piping for reactive chemicals would be trapped and isolated from other drains to eliminate noxious or toxic vapors.

Personnel would use approved personal protective equipment during chemical spill containment and cleanup activities. Personnel would be trained in the handling of these chemicals and would be instructed in the procedures to follow in case of a chemical spill or accidental release. Supplies of emergency response equipment including absorbent material would be stored on-site for spill cleanup.

A list of the chemicals anticipated to be used on the project site and their storage locations is provided in **Section 5.7, Hazards, Hazardous Materials/Waste and Wildfire**.

3.6.9 Fire Protection

Fire protection would be provided to limit the risk of personnel injury, property loss, and possible disruption of the electricity generated by the project. Fire protection as it pertains to the project components are discussed below.

Solar Facility

Solar arrays and PV panels are fire-resistant, as they are constructed largely of steel, glass, aluminum, or components housed within steel enclosures. In a wildfire situation, the panels would be rotated and stowed in a panel-up position. The rotation of the tracker rows would be controlled remotely via a wireless local area network. All trackers could be rotated simultaneously in a hazard situation. During construction, standard defensible space requirements would be maintained surrounding any welding or digging operations.

O&M Facilities

Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at O&M facilities, in accordance with current CFC.

Battery Energy Storage System

The BESS enclosures are outdoors and are not “walk-in” cabinets; therefore, fire suppression is not required by the CFC. The BESS megapacks would be designed according to National Fire Protection Association (NFPA) Section 855. A hazard mitigation analysis developed by the BESS manufacturer would be provided to the local authorities and would be designed to comply with California Codes 1207.1.4.1 and 1207.1.4.2. The BESS yard would have thermal detection cameras installed externally on battery containers and would be strategically placed in optimal locations to detect fires. These cameras would be remotely monitored 24 hours a day. There would be up to four emergency 15,000-gallon water tanks for the project, based on final layout.

The BESS equipment selected for the project would be tested pursuant to UL 9540A standards, and the project would be designed and built pursuant to UL and NFPA standards.

The BESS equipment would be designed to minimize the risk of an over-pressure event and deflagration through the use of over-pressure vents and a sparker system. These safety features would be tested pursuant to UL 9540A standards to demonstrate their effectiveness in preventing deflagration in a large-scale fire.

3.6.10 Emergency Power

Up to three self-contained LPG gensets would supply emergency power to the project substation when electric power is not available. The LPG generator for the project substation would be used for backup power to the substation control buildings during power supply failures for climate control and charging batteries for protective systems. The gensets would be powered by an approximately 150 ekW rated engine.⁴

Auxiliary Systems

SCADA and Telecommunications Facilities. The facility would be designed with a comprehensive Supervisory Control and Data Acquisition (SCADA) system to allow remote monitoring of facility operation and/or remote control of critical components. The fiber optic or other cabling required for the monitoring system typically would be installed in buried conduit within the access road or planned trenching leading to a SCADA system cabinet at the on-site step-up substation for the project site or a SCADA system cabinet within the O&M building. External telecommunications connections to the SCADA system cabinets could be provided through wireless or hard-wired connections to locally available commercial service providers.

The project's SCADA system would interconnect to an external fiber optic network or fixed wireless service at the on-site step-up substation, and would require installation of buried fiber optic cables underground or fixed wireless antennas. External telecommunications connections to the SCADA system cabinets could be provided through wireless or hard-wired connections to locally available commercial service providers, so no additional disturbance associated with telecommunications is anticipated for the SCADA system.

PG&E downstream network upgrades associated with the project were identified in the California Independent System Operator (CAISO) Phase II Interconnection Study and are discussed under subsection "3.8, Non-Jurisdictional Project Components" below. Downstream network upgrades would include establishing microwave and fiber line communications paths to meet PG&E's communications reliability standards and support redundant communication paths for the utility switchyard. The digital microwave pathway would utilize the utility switchyard's new approximately 120-foot to 200-foot microwave antenna tower and either existing or new microwave towers at existing

⁴ These engines are expected to operate less than 100 hours per year for reliability testing and maintenance. They would only otherwise operate in an emergency requiring operation of the critical facility loads when electric power is not available. This emergency backup equipment does not need to operate for the facility to function during normal operation.

substations or switchyards. PG&E proposes to install a combination of fiber lines on existing electric transmission 230 kV structures using Optical Ground Wire (OPGW) and on existing electric distribution structures using All-Dielectric Self-Supporting (ADSS).

The project does not require the use of fossil fuels during normal operations, with the exception of diesel that would be used for fueling equipment and LPG that would be used for the gensets. Diesel would be stored in an above ground storage tank in compliance with federal, state and local rules and regulations. LPG for refueling the gensets would not be stored on site.

3.6.11 Safety

The project would be designed to maximize safe operation. Facility operators would be trained in safe operation, maintenance, and emergency response procedures to minimize the risk of personal injury and damage to the facilities. **Section 4.4, Worker Safety and Fire Protection**, provides a hazards analysis and describes project training and safety programs.

3.6.12 Facility Closure

Facility closure can be temporary or permanent. Temporary closure is defined as a shutdown for a period exceeding the time required for normal maintenance, with an intent to restart in the future. Causes for temporary closure may include equipment upgrades and repowering the project or damage to the project components from earthquake, fire, storm, or other natural acts. Permanent closure is defined as a cessation in operations with no intent to restart operations.

Temporary Closure

The project's equipment has a useful life of up to 35 years. At that time, the applicant would seek to either repower or decommission the project. In order to repower, the project components would likely be optimized to increase the project's efficiency by swapping out inverters for more efficient units, and potentially swapping out some of the solar facility's photovoltaic panels. Ground disturbing work would not be necessary for optimization activities. The project would be offline for several weeks or months during optimization activities but would subsequently continue delivering electricity to the wholesale market for many decades.

For a temporary closure where there is no release of hazardous materials, such as in the case of repowering, the project would maintain security of the project components and would notify the CEC and other responsible agencies as required by law. Where the temporary closure includes damage to the project components, and where there is a release or threatened release of regulated substances or other hazardous materials into the environment, procedures would be followed set forth in accordance with emergency response procedures set forth in the Emergency Action Plan and the Hazardous Materials Business Plan. Refer to sections **Section 5.7, Hazards, Hazardous Materials/Waste and Wildfire**, and **Section 4.4, Worker Safety and Fire**

Protection, for a description of the Hazardous Materials Business Plan and Emergency Action Plan, respectively. Procedures would include methods to control releases, notification of applicable authorities and the public, emergency response, and training for personnel in responding to and controlling releases of hazardous materials. Once the immediate problem is solved and the regulated substance/hazardous material release is contained and cleaned up, temporary closure would proceed as described above for a temporary closure where there is no release of hazardous materials.

Permanent Closure

When the project, excluding the utility switchyard, is permanently closed, the closure procedure would follow a decommissioning and reclamation plan. At the time of decommissioning, all decommissioning related activities would follow the then-applicable laws, ordinances, regulations, and standards. This section summarizes the decommissioning plan.

Upon decommissioning, a majority of project components would be suitable for recycling or reuse (e.g., compressors, pumps, reverse osmosis (potable water system) transformers, rectifiers). All dismantling, removal, recycling, and disposal of materials generated during decommissioning would comply with rules, regulations, and prevailing federal, state, and local laws at the time decommissioning is initiated and would use approved local or regional disposal or recycling sites as available.

Decommissioning activities would require similar equipment and workforce as construction. It is anticipated that the decommissioning activities for the project can be completed in up to a three-year period. The following activities would be involved:

- Removal and transportation of all project components from the project site
- Removal of the solar panels, solar panel racking, steel foundation posts and beams, inverters, transformers, overhead and underground cables and lines, equipment pads and foundations, equipment cabinets, and ancillary equipment
- Discharge and removal of the battery modules and electrical equipment
- Dismantling and removal of the wastewater treatment plant, if necessary
- Removal of any civil facilities, access roads, and security fence, and drainage structures and sedimentation basins

The panels could be sold into a secondary solar photovoltaic panel market or returned to the original vendor for recycling and reuse of materials. Compressors, pumps, reverse osmosis (potable water system) and the control and safety equipment would have to be dismantled, electronics and cabling recycled, and remaining equipment either recycled as scrap metal or disposed of at a landfill. Catalysts and gear and lube oil would be discarded as per requirements on the manufacturer safety data sheets.

The majority of the components of the solar facility are made of materials that can be readily recycled. If the panels can no longer be used in a solar array, the frames, glass, and semiconductors can be recycled and reused. Other components of the solar facility, such as the tracker structures and mechanical assemblies and pipe racks can be recycled, as they are made from galvanized steel. Equipment such as drive controllers, inverters, transformers, rectifiers, and switchgear can be either reused or their components recycled.

The equipment pads are made from concrete, which can be crushed and recycled. Underground conduit and wire can be removed by uncovering trenches, removing the conduit and wire, and backfilling. The electrical wiring is made from copper and/or aluminum and can be reused or recycled, as well. It is estimated that 100 percent of copper components would be recycled and approximately 50 percent of aluminum and other components would be recycled.

The project site would be restored and reclaimed to the extent practicable to pre-construction conditions consistent with site lease agreements and landowner coordination. After all equipment and infrastructure is removed during decommissioning, any holes or voids created by poles, concrete pads, and other equipment would be filled in with native soil to the surrounding grade. All access roads and other areas compacted by equipment during the decommissioning would be decompacted to a depth necessary to ensure proper density of topsoil, drainage of the soil, and root penetration prior to fine grading and tilling to a farmable condition consistent and compatible with the surrounding area and associated land use. It is anticipated that most of the site would be returned to farmland and/or pasture after decommissioning through implementation of appropriate measures to facilitate such uses. If no specific use is identified, the project site would be vegetated with grassland seed mix comprised of a combination of native and naturalized grasses and forbs. The goal of the reclamation would be to restore natural hydrology and vegetative cover to the greatest extent practicable while minimizing new disturbance and removal of existing vegetation.

Section 9, Compliance Conditions and Compliance Monitoring Plan provides a means for assuring that the facility's eventual permanent closure and maintenance do not pose a threat to public health and safety and/or to environmental quality. **COM-15 Facility Closure Planning** requires the project owner to coordinate with the CEC to plan and prepare for eventual permanent closure, provides for CEC approval of the final closure plan, and ultimately provides for CEC oversight of facility closure.

3.7 Non-Jurisdictional Project Components

PG&E facilities fall under the jurisdiction of the California Public Utilities Commission (CPUC), and PG&E would separately comply with CPUC permitting requirements for its interconnection facilities.

3.7.1 Facility Design and Description

PG&E Utility Switchyard

A utility-owned switchyard would be sited on approximately 50 acres and would electrically connect DCEP's generation onto the utility's 500 kV transmission network. As shown in **Figure 3-2** the utility switchyard would be on the west side of the project and serve as a termination point for the project gen-tie and would loop into the Los Banos-Midway #2 500 kV transmission line. The utility switchyard would contain approximately five 500 kV circuit breakers and would be surrounded by a new security wall or chain link barbed wire security fence up to approximately 20 feet in height with a secure gate accessible only by PG&E staff.

Structural components within the utility switchyard area would include:

- One up to 199-foot-tall free-standing digital microwave antenna (radio tower) to support SCADA communication between the switchyard and the off-site PG&E Operations Center. The foundation would either be a concrete slab of up to 50 feet by 50 feet or drilled-pier depending on the results of future soils studies. Support guy wires may be utilized if deemed necessary.
- Series capacitor banks (sizing to be determined by utility requirements).
- Approximately 15 500 kV steel A-frame dead-end poles up to 150 feet in height with foundations approximately 20 feet deep or more.
- Busbar (a conducting bar that carries heavy currents to supply several electric circuits).
- Two modular protection automation and control (MPAC) enclosure(s) approximately 150 feet by 25 feet by 12 feet tall for PG&E's substation control and protection equipment; MPAC building would be installed on a concrete foundation.
- Two switchyard battery enclosure area(s) approximately 34 feet by 16 feet by 12 feet tall.
- Five 500 kV circuit breakers and air disconnect switches.
- On-site stormwater retention pond (approximately 1,300 feet by 130 feet) for temporary run-off storage during rainfall events.
- New security wall or chain link barbed wire security fence up to approximately 20 feet in height with a secure gate accessible only by PG&E staff.

At the completion of the utility switchyard, ownership would transfer to PG&E, who would assume responsibility for operation of the switchyard. It is anticipated that the switchyard would be remotely operated and maintained within PG&E's existing O&M program.

PG&E Downstream Network Upgrades

The project would interconnect to PG&E's transmission system within the California ISO planning area. The California ISO has identified four potential affected systems from the QC14 Phase I Interconnection Study: (1) Power Enterprise of the San Francisco Public Utilities Commission (CCSF), (2) California Department of Water Resources, (3) Modesto Irrigation District, and (4) Western Power Administration, Sierra Nevada Region W. The applicant has contacted all four potential affected systems as of August 2023. After the California ISO completed and published the QC14 Phase II Interconnection Study in January 2024, conversations with the four identified systems resumed.

Table 3-3 below lists the downstream network upgrades associated with the project that were identified in the California ISO Phase II Interconnection Study. The downstream network upgrades include 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 OPGW routes along existing PG&E transmission line corridors, which generally run parallel to I-5 (Scenario 1: 15 miles, Scenario 2: 28 miles, or Scenario 3: 25 miles), to facilitate connection between the PG&E utility switchyard (for DCEP) (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 are being evaluated and permitted under a separate CPUC formal process with a different project proponent.

The PG&E downstream network upgrade components are depicted in **Figure 3-4**, **Figure 3-5**, and **Figure 3-6**.

TABLE 3-3 DOWNSTREAM NETWORK UPGRADES

Upgrade Classification	Upgrade	Description	Project Cost Allocation
Reliability Network Upgrade (RNUs)			
Interconnection RNU-Allocated (IRNU-A)	Darden Utility Switchyard	<ul style="list-style-type: none"> See PG&E Utility Switchyard project description. 	100
IRNU-A	Los Banos Substation	<ul style="list-style-type: none"> Install a megawatt (MW) terminal and Direct Transfer Trip (DTT) scheme between the Darden Utility Switchyard and Los Banos Substation using existing IT T1⁵ infrastructure for the communication circuits. 	100
IRNU-A	Midway Substation	<ul style="list-style-type: none"> Install a DTT scheme between the Darden 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. Replace or modify line relays installed with the new control building to maintain compatibility with line relays at the Darden Utility Switchyard. 	100
IRNU-A	Gates (or Manning) Substation	<ul style="list-style-type: none"> Modify the Series Capacitor, as required. <ul style="list-style-type: none"> A new series capacitor bank would need to be installed at Manning Substation, if that facility is built and comes online before Darden. If Darden comes online first, the series capacitor would then need to be installed at the Gates Substation instead. 	100
IRNU-A	Transmission Line and Fiber Install	<ul style="list-style-type: none"> See PG&E Utility Switchyard project description. 	100
Network Upgrade Interconnection Facility (NU/IF)	Transmission Line Transposition Towers (Manning Substation Scope)	<p>A Transposition Structure will be added at approximately 8 miles and 16 miles south of the Manning Substation (two total structures) in the existing PG&E 500 kV corridor. Scope includes concrete foundations and Lattice Steel Poles or Tubular Steel Poles to transpose the line conductors.</p> <p>This upgrade is currently in the Manning Substation scope and would only be associated with DCEP if both of the following occurred:</p> <ul style="list-style-type: none"> Harlan switching station seeks in-service prior to the Manning Substation The scope currently assigned to Manning Substation cannot be scheduled ahead of the Harlan switching station's desired in-service date 	TBD
General RNU (GRNU)	Los Banos 500 kV circuit breakers 822, 832 & 842 overstress	<ul style="list-style-type: none"> Replace Los Banos 500 kV circuit breakers 822, 832 & 842. 	15.17

TABLE 3-3 DOWNSTREAM NETWORK UPGRADES

Upgrade Classification	Upgrade	Description	Project Cost Allocation
GRNU	Midway 500 kV CB 742, 822, 912, 942 Overstress beyond 50 kA	<ul style="list-style-type: none"> Replace Midway 500 kV circuit breakers 742, 822, 912, 942. 	17.40
Conditionally Assigned Network Upgrades (CANUs)			
GRNU	Midway 230 kV Bus Overstress	<ul style="list-style-type: none"> Install 2 x 16 ohm series bus reactors between Midway substation 230 kV bus sections D and E (16 ohm parallel/8 ohm net). 	6.43

Note: 5 Type of broadband telecommunications connection used especially to connect internet service providers to the internet's infrastructure.

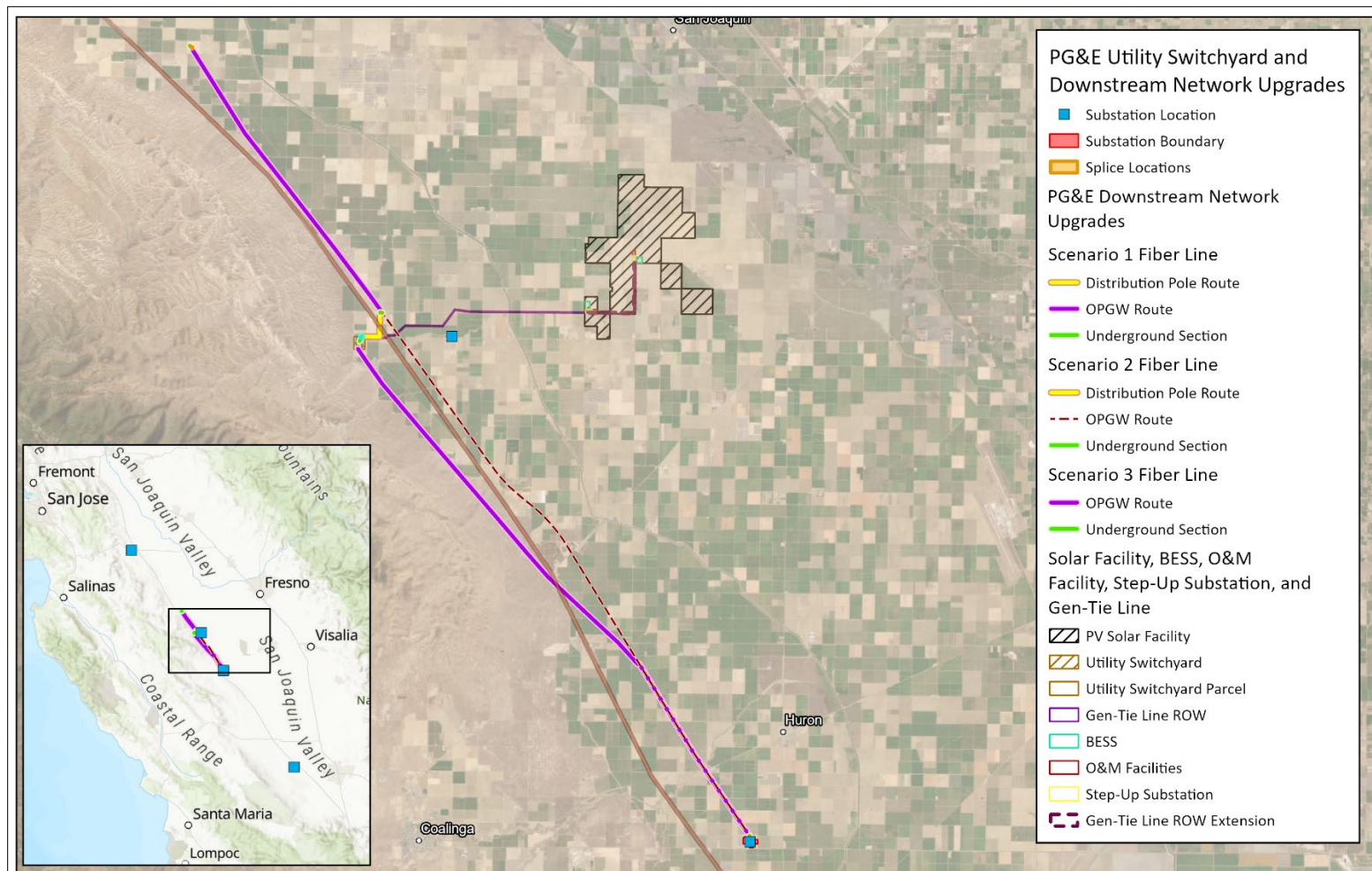


Figure 3-4
Project Components

Sources: Based on RCI 2024z, Figure 2

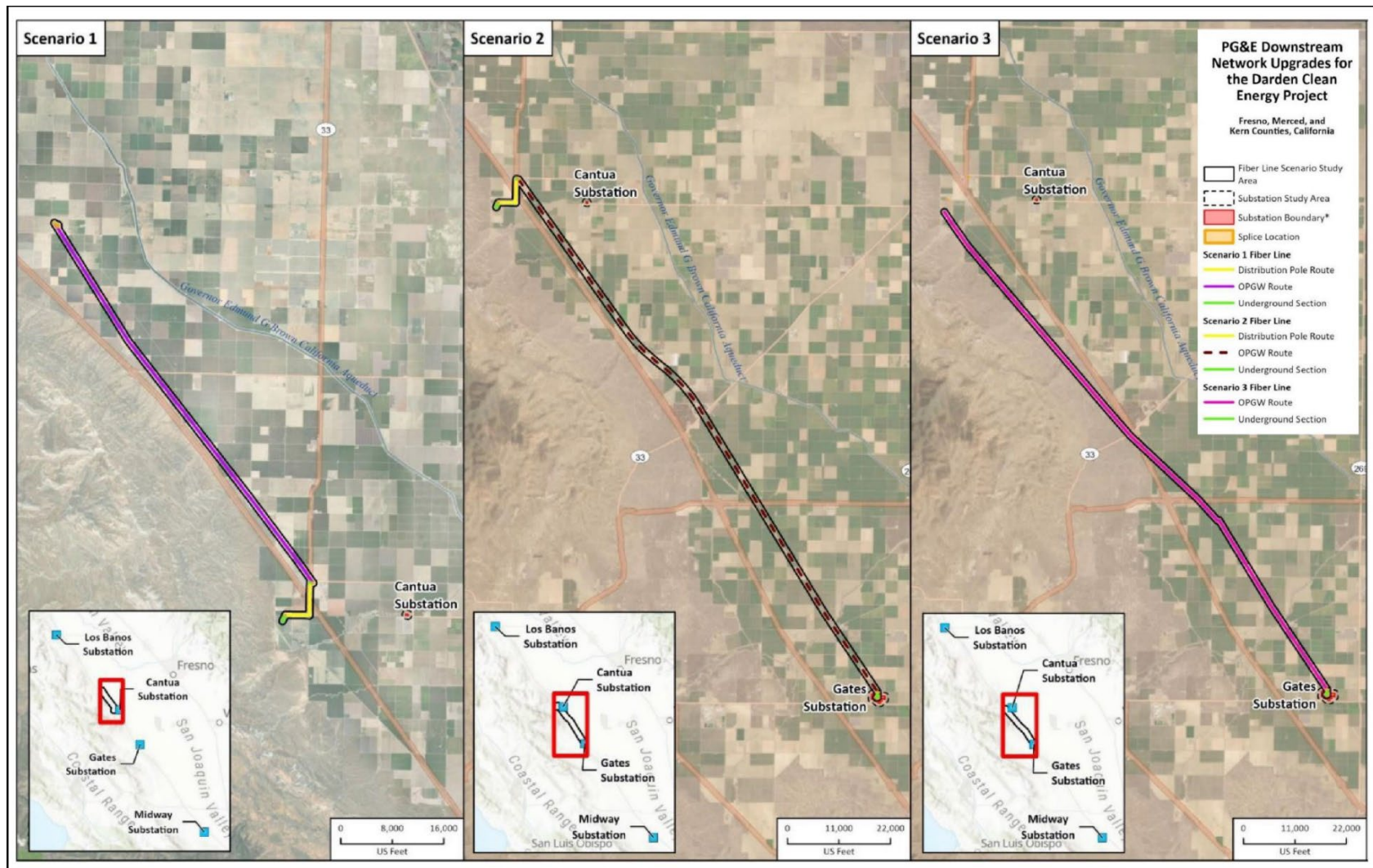
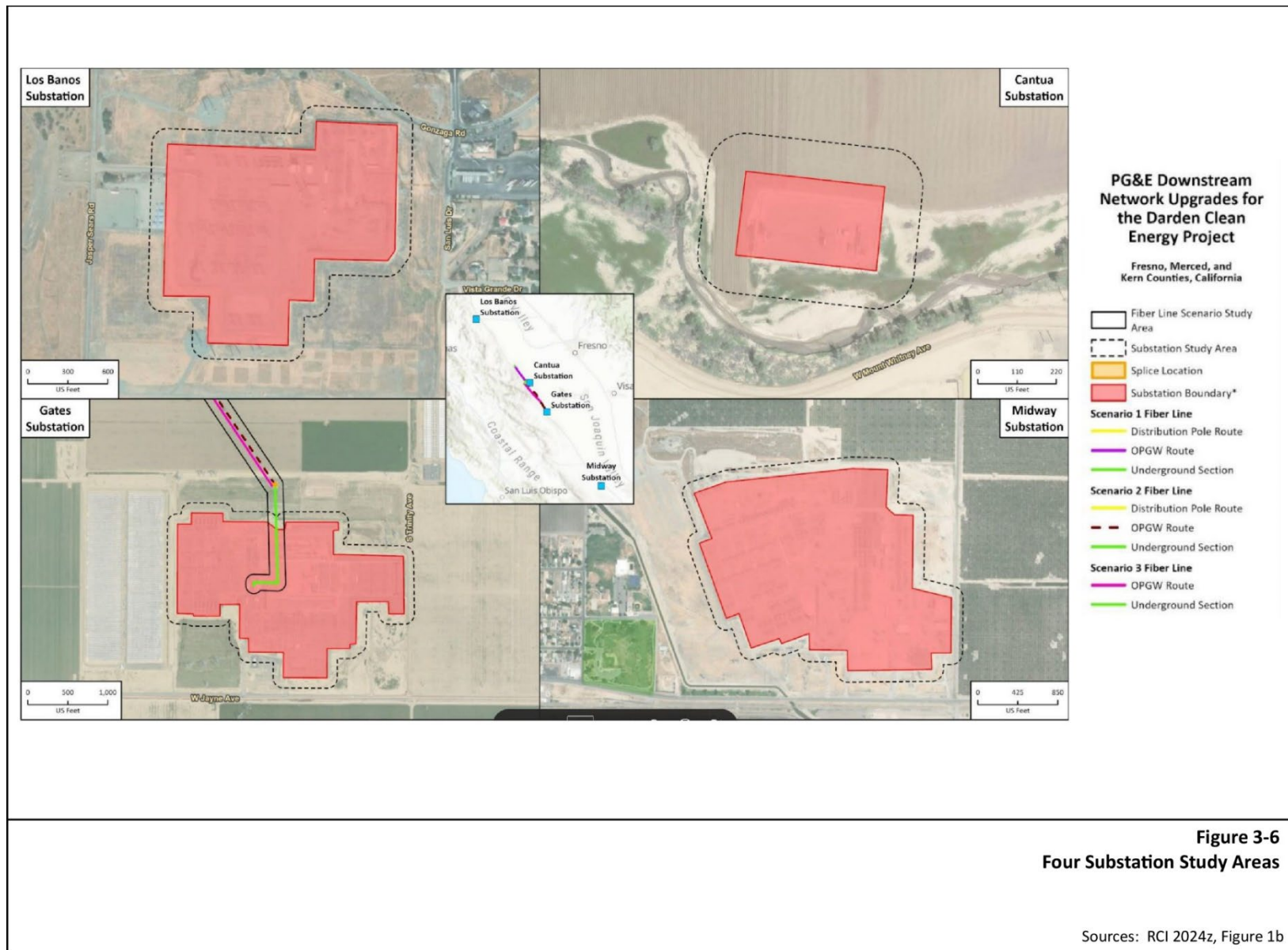


Figure 3-5
Three Alternative Fiber Line Scenario Study Areas

Sources: RCI 2024z, Figure 1a



Components and activities of the three alternative fiber line scenarios and four existing PG&E substations are described in detail below.

Telecommunication Facilities

To meet PG&E's communications reliability standards, microwave and fiber line communications paths would 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 ADSS. The fiber line would be installed under one of the following scenarios summarized in **Table 3-4** and **Figure 3-5**.

TABLE 3-4 COMPONENTS OF THREE ALTERNATIVE FIBER LINE SCENARIOS		
Scenario 1 (15 miles)	Scenario 2 (28 miles)	Scenario 3 (25 miles)
Mixture of OPGW and ADSS	Mixture of OPGW and ADSS	Communication between utility switchyard and existing PG&E Gates Substation
Communication between utility switchyard and existing telecommunications infrastructure along Panoche-Tranquility 230 kV line	Communication between utility switchyard and existing PG&E Gates Substation	Scenario 3 Fiber Line would be underground, overhead on a dedicated pole line, or a mixture of both within PG&E's existing 500 kV transmission line corridor, transitioning to OPGW within PG&E's existing 230 kV transmission line corridor
Scenario 1 Fiber Line would be co-located within an existing PG&E electric distribution and 230 kV transmission line corridor in Fresno County	Scenario 2 Fiber Line would be co-located within an existing PG&E electric distribution and 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
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.	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 DCEP boundary	Ground disturbance expected: (a) within DCEP boundary from	

TABLE 3-4 COMPONENTS OF THREE ALTERNATIVE FIBER LINE SCENARIOS

Scenario 1 (15 miles)	Scenario 2 (28 miles)	Scenario 3 (25 miles)
from where Scenario 1 Fiber Line originates at the utility switchyard to the dead-end electric distribution structure immediately adjacent to DCEP, (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.	where Scenario 2 Fiber Line originates at the utility switchyard to the dead-end electric distribution structure immediately adjacent to DCEP, (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	

Source: RCI 2024z, Table 1

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 DCEP 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 DCEP.
- Where the Scenario 1 Fiber Line or Scenario 2 Fiber Line transitions between existing distribution structures to transmission structures.
- Where Scenario 1 Fiber Line transitions between existing transmission structures to the splice point.
- 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.

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 would utilize the utility switchyard's new approximately 120-foot to 200-foot microwave antenna tower. One of these options would be used and selection of the path would 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 at the Giffen Substation.
- Microwave path to an existing microwave tower at the Excelsior Switching Station.

- Microwave path to an existing microwave tower at Joaquin Ridge.
- Microwave path to Cantua Substation, which would require installation of one new microwave tower.

Substations

The four existing PG&E Substations where proposed activities would occur are described below and depicted in **Figure 3-6**.

Los Banos Substation. The following work would occur within the fence line and existing footprint of the substation:

- Install a MW terminal and 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 and 842.

Midway Substation. The following work would 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, and 942.
- Install 2 x 16 ohm⁵ 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 subject to permitting 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 would 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

⁵ A unit used in the International System of Units to measure electrical resistance. It represents the resistance that allows one ampere of current to flow when one volt is applied.

approximately 120-foot to 200-foot microwave antenna tower and would require installation of one new microwave tower at Cantua Substation.

3.7.2 Location

The PG&E Downstream Network Upgrades are 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) (**Figure 3-4, Figure 3-5 and Figure 3-6**).

Fiber Communication Line

The three alternative fiber line scenarios generally run parallel to I-5 in western Fresno County, as described below (**Figure 3-5**).

- Scenario 1 Fiber Line runs for approximately two 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 miles 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 in an agricultural field approximately 0.3-miles northeast of the S Jerrold Avenue and W Dinuba Avenue intersection.
- Scenario 2 Fiber Line runs for approximately two 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 miles 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 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-miles 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 on the northwest corner of the W Jayne Avenue and S. Trinity Avenue intersection.

The existing transmission lines in the vicinity of the DCEP, 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.

Substations

- Cantua Substation is 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 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 in Merced County directly south of Santa Nella and east of San Luis Reservoir along the south side of California State Route 152 (SR 152), approximately 55 miles northwest of the utility switchyard. It is predominantly surrounded by undeveloped land; a gas station travel center, hotel, recreational vehicle (RV) park, and small residential area are to the east.
- Midway Substation is in Buttonwillow, Kern County, on the north side of California State Route 58 (SR 58). Residential and recreational areas of Buttonwillow bound the substation on the west, with agricultural fields to the north and east. California SR 58 is to the south, on the other side of which are agricultural fields and a disturbed area with farmer's co-op facilities.

3.7.3 Construction Methods and Activities

PG&E Utility Switchyard

The applicant would construct the utility switchyard and deed it to PG&E upon completion and inspection, to be owned and operated by PG&E as a public utility. Construction would occur in a phased approach beginning with site preparation and grading of the site, installing foundations and underground equipment, and then installing and testing electrical equipment. Site preparation would involve grubbing, clearing, and grading of the utility switchyard footprint (grading would be minimal due to the existing flat terrain) as well as installing the security wall or fence. Underground equipment, if necessary, would be installed in trenches and backfilled with suitable material (e.g., excavated soil or clean fill). Utility switchyard equipment would be installed on concrete foundations.

Equipment used for construction of the utility switchyard may include, but is not limited to: cranes, aerial lift, skid steer loaders, rubber-tired loaders, rubber-tired dozer, welders, trencher, forklift, bore/drill rig, grader, roller, tractor/loader/backhoe, haul trucks, and utility task vehicles (UTVs). Approximately three-acre-feet of water would be used during construction of the utility switchyard, at an average of 50 to 100 gallons per day (this number is included in the overall 1,100 acre-feet of construction water needed for the project as a whole).

Construction of the power line interconnection and other interconnection facilities would be completed by PG&E. The new structures would require permanent concrete

foundations approximately six feet in diameter and up to 35 feet deep. Construction would involve temporary ground disturbance around each new power pole location (approximately a 50-foot radius) as well as temporary ground disturbance associated with access to each proposed structure location (approximately a 15-foot-wide access route if there is an adequate turning radius).

PG&E Downstream Network Upgrades

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 two and three 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 would be finalized during detailed design. The criteria used in selecting the final pull/reel sites would 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 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 3 to 5 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 good 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 10 200-foot by 200-foot HLZs would be situated approximately every 3 to 5 miles using minimal surface disturbance, similar to the pull sites. Establishing these HLZs would involve minimal temporary ground disturbance.

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 would 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 would 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 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 two to three weeks. PG&E's construction start is dependent on receiving approval from the CPUC.

Substations. Work at the Los Banos, Midway, and Gates substations would occur within the substation fence lines. If the Cantua Substation microwave path option is selected, a new microwave tower would be installed. If the 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 would 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.

3.7.4 Operations and Maintenance Activities

PG&E Utility Switchyard

At the completion of the switchyard, ownership would transfer to PG&E, who would assume responsibility for operation of the switchyard. It is anticipated that the switchyard would be remotely operated and maintained within PG&E's existing O&M program.

PG&E Downstream Network Upgrades

Once constructed, 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 1 mile); electrical tower line construction (no longer than one mile); minor substation expansion; and electric underground line construction (almost exclusively conducted in urban settings).

3.8 Intended Uses of this Environmental Document

This environmental document supports the CEC's decision on whether to certify the construction and operation of the project. Under Public Resources Code section 25545.1 the CEC has the exclusive jurisdiction to consider and certify this project and all related permits or licenses, with narrow exceptions, are subsumed into the CEC certification.

The CEC anticipates the California Public Utilities Commission (CPUC) would use this environmental document when issuing any permits or licenses associated with the PG&E utility switchyard and downstream network upgrades. The CEC also anticipates the Fresno County Public Works and Planning Department (FCPPWD), as delegated as the local agency responsible for onsite wastewater treatment system by the State Water Resources Control Board (SWRCB) through the Local Agency Management Program (LAMP), may use this environmental document when issuing any permits associated with the project's proposed septic system. The CEC does not anticipate any other state or local jurisdictions would use this environmental document to issue any permits or licenses.

In developing this environmental analysis staff consulted with various other state and local agencies including the CPUC, California Department of Fish and Wildlife, Central Valley Regional Water Board, San Joaquin Valley Air Pollution Control District, Fresno County Fire Protection District and Fresno County. Staff also consulted with U.S. Fish and Wildlife Service during the development of this environmental document.

3.12 References

- IP 2024n – Intersect Power (TN 260642). Updated Project Description. December 2024. Dated December 13, 2024. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023c – Rincon Consultants, Inc. (TN 252920). Appendix F Project Design Layout and Elevations. Dated November 3, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023i – Rincon Consultants, Inc. (TN 252930). Chapter 3 Facility Closure. Dated November 3, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description. Dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Rincon Consultants, Inc. (TN 256296). CEC Data Request Response Set 4. Dated May 10, 2024. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024z – Rincon Consultants, Inc. (TN 258571). CEC Data Request Response Set 6. Dated August 20, 2024. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024dd – Rincon Consultants, Inc. (TN 259441). Applicant Memo to CEC Regarding Removal of Hydrogen Component. Dated October 3, 2024. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

Section 4

Engineering Evaluation

The purpose of this analysis is to ensure that the project would be built to applicable engineering codes, ensure public health and safety, and verify that applicable engineering LORS have been identified. This analysis also evaluates the applicant's proposed design criteria, describes the design review and construction inspection process, and establishes conditions of certification that would monitor and ensure compliance with engineering LORS and any other special design requirements. These conditions allow both the California Energy Commission (Energy Commission) compliance project manager (CPM) and the applicant to adopt a compliance monitoring program that will verify compliance with these LORS.

4.1 Facility Design

4.1.1 Setting

Existing Conditions

The proposed Darden Clean Energy Project (DCEP or project) is a 1,150 megawatt (MW) solar photovoltaic (PV) project with an up to 4,600 MW-hour battery energy storage system (BESS), step-up substation, operation and maintenance (O&M) facility and generation-intertie line that would be located within the unincorporated area of Fresno County and would lie in seismic zone D (RCI 2023ff, Section 2, RCI 2023m, Section 5.16.1.3). The DCEP would be located on approximately 9,500 acres (IP 2024o). The project site is on undeveloped, retired agricultural land.

Regulatory

Federal

Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards. Title 29 of the CFR standard comprehensively addresses safety and health standards for general industry.

State

California Building Standards Code 2022 (or the latest edition in effect) (also known as Title 24, California Code of Regulations). The California Building Standards Code applies to the planning, design, operation, construction, use, and occupancy of power plants and their ancillary facilities.

Local

Fresno County General Plan

Health and Safety Element. The Seismic and Geologic Hazards section in the Health and Safety Element is intended to minimize the loss of life, injury, and property damage due to seismic and geologic hazards (Fresno 2024).

General

The following are applicable general standards for the project:

- Air Moving and Conditioning Association (AMCA) Standards
- American Concrete Institute (ACI) Codes
- American Institute of Steel Construction (AISC) Codes
- American National Standards Institute (ANSI) Codes
- American Society of Civil Engineers (ASCE) Codes

- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards
- American Society of Mechanical Engineers (ASME) Codes
- American Society of Testing and Materials (ASTM) Codes
- American Welding Society (AWS) Codes
- California Electrical Code
- Concrete Reinforcing Steel Institute (CRSI) Codes
- National Association of Corrosion Engineers (NACE) Standards
- National Electric Safety Code (NESC) Standards
- National Fire Protection Association (NFPA) Standards
- Occupational Safety and Health Administration (OSHA) Standards
- Steel Deck Institute (SDI) – Design Manual for Floor Decks and Roof Decks

4.1.2 Impacts

Facility design encompasses the civil, structural, mechanical, and electrical engineering design of the project. The purpose of this facility design analysis is to:

- verify that the laws, ordinances, regulations, and standards (LORS) applicable to the engineering design and construction of the project have been identified;
- verify that the project and ancillary facilities have been described in sufficient detail upon review and approval of the California Energy Commission's (CEC) Delegate Chief Building Official (DCBO) including proposed design criteria and analysis methods;
- provide reasonable assurance that the project can be designed and constructed in accordance with all applicable engineering LORS, and in a manner that assures public health and safety through the DCBO's review and approval process;
- determine whether special design features should be considered during final design to deal with conditions unique to the site which could affect public health and safety through the DCBO's oversight and approval process; and
- describe the design review and construction inspection process and establish conditions of certification (COCs) that will be used to monitor and ensure compliance with the engineering LORS and any special design requirements.

4.1.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 4.1-1 below details staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific COCs, the proposed

jurisdictional components of the project would conform with all applicable LORS. The subsection below, "4.1.5 Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 4.1-1 COMPLIANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis For Determination
Federal	
Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards.	Yes. With implementation of Conditions of Certification GEN-1 through GEN-8 , CIVIL-1 through CIVIL-4 , STRUC-1 through STRUC-4 , MECH-1 , MECH-2 , and ELEC-1
State	
California Building Standards Code 2022 (or the latest edition in effect) (also known as Title 24, California Code of Regulations)	Yes. With implementation of Conditions of Certification GEN-1 through GEN-8 , CIVIL-1 through CIVIL-4 , STRUC-1 through STRUC-4 , MECH-1 , MECH-2 , and ELEC-1
Local	
Fresno County General Plan	Yes. With implementation of Conditions of Certification CIVIL-1 and CIVIL-4 , and STRUC-1 through STRUC-4
General	
Air Moving and Conditioning Association (AMCA) Standards American Concrete Institute (ACI) Codes American Institute of Steel Construction (AISC) Codes American National Standards Institute (ANSI) Codes American Society of Civil Engineers (ASCE) Codes American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards American Society of Mechanical Engineers (ASME) Codes American Society of Testing and Materials (ASTM) Codes American Welding Society (AWS) Codes California Electrical Code Concrete Reinforcing Steel Institute (CRSI) Codes National Association of Corrosion Engineers (NACE) Standards National Electric Safety Code (NESC) Standards National Fire Protection Association (NFPA) Standards Occupational Safety and Health Administration (OSHA) Standards Steel Deck Institute (SDI) – Design Manual for Floor Decks and Roof Decks	Yes. With implementation of Conditions of Certification CIVIL-1 through CIVIL-4 , STRUC-1 through STRUC-4 , MECH-1 , MECH-2 , and ELEC-1

4.1.4 Conclusions and Recommendations

CEC staff concludes that the design and construction of the jurisdictional components of the project, consisting of the solar facility, BESS, step-up substation, O&M facility and generation-intertie line would comply with the applicable LORS.

The proposed COCs would ensure that the DCEP is designed and constructed in accordance with applicable engineering LORS. This would be accomplished through design review, plan check, and field inspections that would be performed by the DCBO. CEC staff would oversee the DCBO's work to ensure satisfactory performance. The conditions below are enforceable as part of the CEC's certification for the jurisdictional project components.

4.1.5 Proposed Conditions of Certification

The following proposed COCs include measures to ensure the jurisdictional project components' conformance with applicable engineering LORS.

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2022 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the DCBO for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving (onsite), demolition, repair, or maintenance of the completed facility.

In the event that the initial engineering designs are submitted to the DCBO when the successor to the 2022 CBSC is in effect, the 2022 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

Verification: Within 30 days following receipt of the certificate of occupancy (CofO), the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting

that all designs, construction, installation, and inspection requirements of the applicable LORS and the CEC's decision have been met in the area of Facility Design. The project owner shall provide the CPM a copy of the CofO within 30 days of receipt from the DCBO.

Once the CofO has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires DCBO approval for compliance with the above codes. The CPM will then determine if the DCBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for DCBO review, the project owner shall furnish the CPM and the DCBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the DCBO. To facilitate audits by CEC staff, the project owner shall provide specific packages to the CPM upon request.

Verification: At least 60 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO and to the CPM the schedule, and the master drawings and master specifications list of documents to be submitted to the DCBO, for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification GEN-2. Major structures and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report (MCR).

GEN-3 The project owner shall make payments to the DCBO for design review, plan checks, construction inspections, and other applicable DCBO activities, based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. If the CEC delegates the DCBO function to a third party or local agency, the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the CEC and the DCBO. These fees may be consistent with the fees listed in the 2022 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the DCBO.

Verification: The project owner shall make the required payments to the DCBO in accordance with the agreement between the project owner and the DCBO. If the CEC delegates the DCBO function to a third party or local agency, the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the CEC and the DCBO. The project owner shall send a copy of the DCBO's receipt of payment to the CPM in the next MCR indicating that applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California-registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE shall:

1. Monitor progress of construction work requiring DCBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to DCBO design review and inspection conforms in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the DCBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the DCBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.

The RE (or their delegate) must be located at the project site or be available at the project site within a reasonable time, during any hours in which construction takes place.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, the resume and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the DCBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code sections 6704, 6730, 6731, and 6736 require state registration to practice as a civil engineer or structural engineer in California).

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the DCBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;
2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the DCBO. These include, but may not be limited to grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and
3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.

B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:

1. Review all the engineering geology reports;
2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load;
3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2022 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and
4. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and
 2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2022 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).
- D. The design engineer shall:
1. Be directly responsible for the design of the proposed structures and equipment supports;
 2. Provide consultation to the RE during design and construction of the project;
 3. Monitor construction progress to ensure compliance with engineering LORS;
 4. Evaluate and recommend necessary changes in design; and
 5. Prepare and sign all major building plans, specifications, and calculations.
- E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the DCBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the CEC's decision.
- F. The electrical engineer shall:
1. Be responsible for the electrical design of the project; and
 2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of construction, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

The project owner shall notify the CPM of the DCBO's approvals of the responsible engineers within five days of the approval.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2022 CBC.

A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the DCBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Inspect the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the DCBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the DCBO and the CPM for corrective action; and
4. Submit a final signed report to the RE, DCBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

Verification: At least 15 days (or project owner- and DCBO-approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the DCBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the DCBO's approval of the qualifications of all special inspectors in the next MCR.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the DCBO for approval. The project owner shall notify the CPM of the DCBO's approval of the newly assigned inspector within five days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the DCBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other LORS.

Verification: The project owner shall transmit a copy of the DCBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next MCR. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action to obtain DCBO's approval.

GEN-8 The project owner shall obtain the DCBO's final approval of all completed work that has undergone DCBO design review and approval. The project owner shall request the DCBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the DCBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site, or at another accessible location, during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the DCBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the DCBO, with a copy to the CPM in the next MCR, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction, the project owner shall provide to the DCBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" files (the latest version of Adobe .pdf available), with restricted (password-protected) printing privileges.

CIVIL-1 The project owner shall submit to the DCBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A construction storm water pollution prevention plan (SWPPP);

4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the 2022 CBC.

Verification: At least 15 days (or project owner- and DCBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the DCBO for design review and approval. In the next MCR following the DCBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the DCBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering, identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the DCBO based on these new conditions. The project owner shall obtain approval from the DCBO before resuming earthwork and construction in the affected area.

Verification: The project owner shall notify the CPM within 24 hours when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the DCBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the DCBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2022 CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the DCBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the DCBO, and the CPM. The project owner shall prepare a written report, with copies to the DCBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the DCBO and the CPM a non-conformance report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the DCBO and the CPM. A list of NCRs for the reporting month shall also be included in the following MCR.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the DCBO's approval of the

final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within their area of responsibility was done in accordance with the final approved plans.

Verification: Within 30 days (or project owner- and DCBO-approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the DCBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. The project owner shall submit a copy of the DCBO's approval to the CPM in the next MCR.

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit plans, calculations, and other supporting documentation to the DCBO for design review and acceptance for all project structures and equipment identified in the DCBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

Construction of any structure or component shall not begin until the DCBO has approved the lateral force procedures to be employed in designing that structure or component. The project owner shall:

1. Obtain approval from the DCBO of lateral force procedures proposed for project structures;
2. Obtain approval from the DCBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;
3. Submit to the DCBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;
4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and
5. Submit to the DCBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of construction of any structure or component listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next MCR, a copy of a statement from the DCBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.

STRUC-2 The project owner shall submit to the DCBO the required number of sets of the following documents related to work that has undergone DCBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2022 CBC.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the DCBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the DCBO and the CPM.

The project owner shall transmit a copy of the DCBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval, and the revised corrective action to obtain DCBO's approval.

STRUC-3 The project owner shall submit to the DCBO design changes to the final plans required by the 2022 CBC, including the revised drawings, specifications,

calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the DCBO prior notice of the intended filing.

Verification: On a schedule suitable to the DCBO, the project owner shall notify the DCBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above- mentioned documents to the DCBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the MCR, when the DCBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2022 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the DCBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the DCBO approvals of plan checks to the CPM in the MCR following receipt of such approvals. The project owner shall also transmit a copy of the DCBO's inspection approvals to the CPM in the MCR following completion of any inspection.

MECH-1 The project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations for the project's mechanical-related components listed in the DCBO-approved master drawing and master specifications list. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such component, the project owner shall request the DCBO's inspection approval of that construction.

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major the project's mechanical-related components, subject to DCBO design review and approval, and submit a signed statement to the DCBO when the proposed components have been designed, fabricated, and installed in accordance with all of the applicable LORS, which may include, but are not limited to:

- NACE SP187-2017 (Design for Corrosion Control of Reinforcing Steel in Concrete);
- NFPA 70B (Practices for Electrical Equipment Maintenance—to reduce hazard to life safety);
- OSHA 1910.119 Process Safety Management of Highly Hazardous Chemicals, Toxins and Reactive;

- Title 24, California Code of Regulations, Part 2 (California Building Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code); and
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems).

The DCBO may deputize inspectors to carry out the functions of the CEC's code enforcement mandate.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of major mechanical-related components' construction listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next MCR.

The project owner shall transmit to the CPM, in the MCR following completion of any inspection, a copy of the transmittal letter conveying the DCBO's inspection approvals.

MECH-2 The project owner shall submit to the DCBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system.

Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the DCBO's inspection and approval of that construction. The final plans, specifications and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the DCBO that the proposed final design plans, specifications and calculations conform with the applicable LORS.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the DCBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer

certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 110 Volts or higher (see a representative list, below) the project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS.

A. Final plant design plans shall include:

1. one-line diagram for the 13.1 kV, 4.16 kV and 480 V systems;
2. system grounding drawings;
3. lightning protection system; and
4. hazard area classification plan.

B. Final plant calculations must establish:

1. short-circuit ratings of plant equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;
4. system grounding requirements;
5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.1 kV, 4.16 kV and 110/480 V systems;
6. system grounding requirements;
7. lighting energy calculations; and
8. 110-Volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.

C. The following activities shall be reported to the CPM in the MCR:

1. Receipt or delay of major electrical equipment;
2. Testing or energizing of major electrical equipment; and
3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the CEC decision.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the DCBO for design review and approval the above listed documents.

The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS and shall send the CPM a copy of the transmittal letter in the next MCR.

4.1.6 References

- Fresno 2024 – Fresno County General Plan Policy Document, dated February 2024, Accessed on: January 14, 2025. Accessed online at:
https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- IP 2024o – Intersect Power (TN 260643). Updated Project Description - Tracked Changes - December 2024, dated December 13, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024k – Rincon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2, dated March 15, 2024. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description, dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023m – Rincon Consultants, Inc. (TN 252934). Section 5-16 Geological Hazards and Resources, dated November 3, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023cc – Rincon Consultants, Inc. (TN 252982). Section 5-11 Waste Management, dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

4.2 Facility Reliability

4.2.1 Setting

Existing Conditions

The proposed Darden Clean Energy Project (DCEP) is a 1,150 megawatt (MW) solar photovoltaic (PV) project with an up to 4,600 MW-hour battery energy storage system (BESS) that would be built on undeveloped, retired agricultural land. This analysis evaluates the proposed project to determine if the power generating facility would be built in accordance with typical industry norms for reliable power generation.

Regulatory

This section addresses Public Resources Code section 25520 which requires that applications for certification contain facility reliability information and Public Resources Code section 25523(h) which requires the written decision to contain a discussion on the electricity reliability benefits of the project. These two sections are made applicable to the evaluation of the DCEP through Public Resources Code sections 25545.2 and 25545.8. See **Section 4.3, Transmission System Engineering** for discussion regarding the project's impacts and benefits on the reliability of the electricity network the project would serve.

4.2.2 Impacts

Power plant systems must be able to operate for extended periods without shutting down for maintenance or repairs and must achieve an availability factor similar to the existing power plant facilities in the California electricity grid system. To achieve this, this reliability analysis, of the project's power plant (electrical generating) systems, encompasses the following benchmarks and ensures that the project would not degrade the overall reliability of the electric system it serves:

- equipment availability;
- plant maintainability and maintenance program; and
- power plant reliability in relation to natural hazards.

Staff uses the above benchmarks as appropriate industry norms to evaluate the project's reliability and determine if its availability factor is achievable.

Equipment Availability

Equipment availability would be ensured based on several factors, including but not limited to component availability from the manufacturer, and site conditions, prior to procurement, construction, and operation. In addition, the project must provide adequate maintenance and repair of the equipment and systems during operations. An

operation and maintenance protocol would be implemented in accordance with the maintenance requirements prescribed by the solar PV and BESS manufacturers.

Emergency Backup Generator

A power generating facility must be capable of operating during electrical outages. The project would include up to three backup generators (gensets) to support the substation control building's climate system and for charging batteries for protective systems during an emergency power outage. Three Power Solutions International 8800CAC 150-kilowatt (kW) liquid petroleum gas-fired gensets would be located at the substation (RCI 2024I).

Plant Maintainability and Maintenance Program

Equipment manufacturers provide maintenance recommendations for their products, and power plant owners develop their plant's maintenance program based on those recommendations. Such a program encompasses both preventive and predictive maintenance techniques. The project would develop its maintenance program in the same way. Moreover, the project would implement a Supervisory Control and Data Acquisition (SCADA) management system which monitors facility operation and provides communications and control of critical components. The SCADA would be used to monitor operations 24 hours per day, 365 days per year. This system would ensure the project's operational efficiency and reliability.

Facility Reliability in Relation to Natural Hazards

Natural forces can threaten the reliable operation of a power plant. Seismic shaking (earthquakes) could present credible threats to the project's reliable operation.

Seismic Shaking

Seismic events affect many regions in California, including the project site. The American Society of Civil Engineers' Hazard Tool identifies Fresno County as being seismic design category D. This category corresponds to buildings and structures in areas that would experience severe and destructive ground shaking, but that are not close to a major fault. The project site would be located approximately 20 miles southeast of the Nunez Fault Zone; see **Section 5.6, Geology, Paleontology, and Minerals**. The fault is considered active; however, the possibility of ground rupture along this fault at the site would be deemed low.

The project would be designed and constructed to meet the latest applicable engineering codes. Compliance with the latest seismic design requirements represents an upgrade in performance during seismic shaking, compared to older facilities, since these requirements have been continually upgraded and made more stringent. Because the project would be built to the latest seismic design requirements, it would be expected to perform better than the older existing power plants in California's electricity grid system.

CEC staff proposes conditions of certification (COCs) to ensure the project complies with these requirements; see **Section 4.1, Facility Design** COCs **GEN-1** (Final on-site inspection of project construction), **GEN-5** (requiring registered engineers to oversee design and construction of the project), and **STRUC-1** through **STRUC-4** (requiring submittals to the DCBO for approval). These COCs include standard engineering design requirements for mitigation of strong seismic shaking, liquefaction, and potential excessive settlement due to dynamic compaction. CEC staff concludes these COCs adequately mitigate potentially significant impacts to the project's functional reliability due to seismic shaking.

Landslides and Seiches

Landslides would not affect the project site. The topography of the project site and its surroundings are relatively flat. The project site is not located near a body of water and would not be affected by seiches. Therefore, landslides and seiches would have no impact on the reliability of the project.

Floodplains

The project would be located in a flood hazard area. Based on a model for rainfall intensity over 24-hours during a 100-year storm event, the maximum depth of floodwater on the project site could be approximately 3 to 6 inches (RCI 2023bb).

The project would be designed and built to provide adequate levels of flood resistance by complying with proposed COC **WATER-6** (compliance with Fresno County Flood Hazard Reduction Ordinance) in **Section 5.16, Water Resources**, COC **GEO-1** (obtaining a grading permit) in **Section 5.6, Geology, Paleontology, and Minerals**, and COC **CIVIL-1** (delegate chief building official (DCBO) approved drainage, grading, erosion control, and storm water plans, alongside civil engineer-signed specifications and calculations) and COC **CIVIL-4** (DCBO approved grading plans for the erosion and sedimentation control work) in **Section 4.1, Facility Design**. CEC staff concludes the above-mentioned COCs would adequately mitigate potentially significant impacts to the project's functional reliability due to the potential for flooding.

Subsidence

The project is located in an area that has experienced land subsidence (a gradual lowering of surface elevation). Subsidence results primarily from over-pumping ground water over time. Subsidence monitoring would be managed by the Department of Water Resources' approved Groundwater Sustainability Agencies (GSA). Subsidence monitoring would be conducted continuously, bi-annually, and annually (RCI 2023oo).

CEC staff has proposed COC **GEO-1** to ensure the project complies with Fresno County's Multi-Jurisdiction Hazard Plan for subsidence. See **Section 5.6, Geology, Paleontology, and Minerals** for further discussion. CEC staff concludes this COC,

along with the GSA's monitoring, would adequately mitigate potentially significant impacts to the project's functional reliability due to subsidence.

Comparison with Existing Facilities

The equivalent availability factor (availability factor) of a power plant is the amount of time the plant is able to produce electricity over a certain period, divided by the amount of time in the period in which the generation resource is available. Solar PV and BESS typically have an availability factor of 99 and 98 percent, respectively (RCI 2023bb).

This availability factor is higher than most other existing power plant facilities.

According to the North American Electric Reliability Corporation, the average availability factor for all fossil-fueled, hydroelectric, pump storage, geothermal, and nuclear-fueled power plants in North America in 2022 was approximately 80 percent (NERC 2022).

The project's expected capacity factor, or percentage of time operating at maximum output, for the solar and BESS facilities would be approximately 20-40 percent and 33 percent, respectively (RCI 2023bb). This capacity factor is lower than traditional baseload combined-cycle power plant facilities which averages approximately 59 percent, but higher than peak-demand natural gas turbine power plant facilities which averages approximately 12 percent (EIA 2025).

4.2.3 Jurisdictional Project Components' Conformance with Applicable LORS

No federal, state, or local regulations related to facility reliability apply to the jurisdictional components of the project.

4.2.4 Conclusions and Recommendations

Staff concludes that the jurisdictional components of the project would be built to operate in a manner consistent with industry norms for reliable operation and would be expected to demonstrate a high availability factor although a lower capacity factor compared to other facilities within the state. No conditions of certification are proposed for power plant reliability.

4.2.5 Proposed Conditions of Certification

There are no proposed conditions of certification for the jurisdictional components of the project for facility reliability.

4.2.6 References

EIA 2025 – U.S. Energy Information Administration (EIA). Electric Power Monthly. Table 6.07.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels. Accessed on January 2025. Available online at:
https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_6_07_a

- NERC 2022 – North American Electric Reliability Corporation (NERC). Generating Unit Statistical Brochures. Accessed on January 18, 2024. Available online at:
<https://www.nerc.com/pa/RAPA/gads/Pages/Reports.aspx>
- RCI 2023bb – Rincon Consultants, Inc. (TN 252981). Chapter 4 Engineering, dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024m – Rincon Consultants, Inc. (TN 255907). Data Response Set 3 Appendix A – SJVACPD Preliminary Draft Permit Application Vol 1, dated April 24, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023oo – Rincon Consultants, Inc. (TN 253035). Section 5-13 Water Resources, dated November 7, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024l – Rincon Consultants, Inc. (TN 255906). CEC Data Request Response Set 3, dated April 24, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

4.3 Transmission System Engineering

4.3.1 Setting

Existing Conditions

The project is proposed on approximately 9,500 acres in an agricultural area of western Fresno County (IP 2024n). Transmission lines in the project area include the Los Banos-Gates No. 1. Los Banos-Midway No.2 500 kV Transmission Lines, which cross the project site immediately west of the proposed PG&E utility switchyard. The current transmission line corridor comprises two 500 kV single circuits parallel to each other and mounted on two distinct rows of transmission towers. The existing two circuits near the project site are spaced approximately 1,200 to 1,600 feet apart and have towers ranging from approximately 100 to 160 feet tall.

Regulatory

Federal/Regional

North American Electric Reliability Council Reliability Standards. The North American Electric Reliability Council's (NERC) Reliability Standards for North America's bulk electric transmission systems provide national policies, standards, principles, and guides to assure the adequacy and security of the electric transmission system. NERC is the North America Electric Reliability Organization (ERO), subject to the oversight of the Federal Energy Regulatory Commission (FERC). The NERC reliability standards provide system performance levels for normal and contingency conditions. With regard to power flow and stability simulations, while these standards are similar to NERC and Western Electricity Coordinating Council (WECC) planning standards, certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards for transmission system contingency performance. The NERC's planning standards apply to interconnected system operations and individual service areas (NERC 2024).

Western Electricity Coordinating Council Planning Standards. The Western Electricity Coordinating Council (WECC) Planning Standards are integrated with the NERC Reliability Standards to provide the system performance standards used to assess the reliability of the interconnected system. The priority of the standards is the uninterrupted continuity of service, and the second priority is the preservation of interconnected operations. Analysis of the WECC system is based, to a large degree, on Section I. A of the standards, *NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table* and on Section I.D, *NERC and WECC Standards for Voltage Support and Reactive Power*. These standards require that the results of power flow and stability simulations verify defined performance levels, including

allowable variations in thermal loading, voltage, and frequency, as well as the loss of load that could occur on systems during various disturbances.

State

California Public Utilities Commission

General Order 95 (GO-95), Rules for Overhead Electric Line Construction. This General Order sets forth uniform requirements for the construction of overhead lines. Compliance with this order ensures adequate service and the safety of the public and the people who build, maintain, and operate overhead electric lines.

General Order 128 (GO-128), Rules for Construction of Underground Electric Supply and Communications Systems. This General Order sets forth uniform requirements and minimum standards for underground supply systems to ensure adequate service and the safety of both the public and the people who build, maintain, and operate underground electric lines.

General Order-131-D, Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California. This General Order specifies application and noticing requirements for new line construction, including EMF reduction.

California Independent System Operator (California ISO) Planning Standards. Planning standards also provide standards and guidelines that assure the adequacy, security and reliability during the planning process of the California ISO's electric transmission facilities. The California ISO Planning Standards incorporate both NERC and WECC Planning Standards. With regard to power flow and stability simulations, the California ISO's Planning Standards are similar to those of the NERC and WECC and to the NERC Planning Standards for transmission system contingency performance. However, the California ISO's standards also provide additional requirements that are not found in the NERC, WECC, or NERC planning standards. The California ISO standards apply to all participating transmission owners that interconnect to both the California ISO-controlled transmission grid and to neighboring grids not operated by the California ISO (California ISO 2023a).

California ISO and Federal Energy Regulatory Commission (FERC) electric tariffs provide guidelines for the construction of all transmission additions and upgrades (projects) within the California ISO-controlled grid. The California ISO also determines the "need" for the proposed project where it will promote economic efficiency and maintain system reliability. The California ISO also determines the cost responsibility of the proposed project and provides operational review for all facilities that are to be connected to the California ISO grid (California ISO 2024a)

General

The National Electric Safety Code. The National Electric Safety Code is a United States standard for the safe installation, operation, and maintenance of electric power and communication utility systems, including power substations, power and communication overhead lines, and power and communication underground lines.

4.3.2 Impacts

This analysis evaluates whether the proposed project's interconnection conforms to all laws, ordinances, regulations, and standards (LORS) required for safe and reliable electric power transmission. Additionally, under the California Environmental Quality Act (CEQA), the California Energy Commission (CEC) must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the CEC (Title 14, California Code of Regulations §15378).

For the interconnection of a proposed solar farm with battery storage or transmission facility to the grid, the interconnecting utility (PG&E) and grid operator (California Independent System Operator [California ISO]) are jointly responsible for ensuring the grid's reliability. To ensure grid reliability, PG&E and California ISO determine the transmission system impacts of the proposed project and any mitigation measures needed to ensure system conformance with utility reliability criteria, NERC planning standards, WECC reliability criteria, and the California ISO reliability criteria for potential impacts to their system. PG&E South 500 kV interconnection area report A and Cluster 14 phase II study report are used to determine the proposed project's impacts on the transmission grid. CEC staff relies on California ISO-conducted studies to assess the project's effect on the transmission grid and to identify whether downstream impacts or indirect project impacts would require additional equipment or strategies to bring the transmission network into compliance with applicable reliability standards.

The study reports analyze the grid, both with and without the proposed project, under conditions specified in the planning standards and reliability criteria. The standards and criteria define the assumptions used in the study and establish the thresholds through which grid reliability is determined. The studies must analyze the project's impact for the proposed first year of operation, which is thus based upon a forecast of loads, generation, and transmission. An interconnection queue establishes generation and transmission forecasts. The studies are focused on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission systems, voltage collapse, loss of loads, or cascading outages), and short circuit duties.

If the studies show that the project's interconnection could cause the grid to be out of compliance with reliability standards, then the study will identify mitigation alternatives or ways in which the grid could be brought into compliance with reliability standards. When a project connects to the California ISO-controlled grid, both the studies and the mitigation alternatives must be reviewed and approved by the California ISO. If the mitigation identified by the California ISO or interconnecting utility includes transmission modifications or additions that require CEQA review, these additions could be

considered part of the “whole of the action” in conjunction with the proposed power plant. The CEC must then analyze the environmental impacts of these modifications or additions.

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

The project would develop, construct, and operate a renewable generating facility that can provide grid reliability. The project includes a 1,150 megawatt (MW) solar photovoltaic generating farm (PV), 4600 MW-hour battery energy storage system (BESS). The project gen-tie line would be extended for approximately four miles to connect from the western edge of the solar farm to the project’s components, as shown in **Figure 3-2** in **Section 3, Project Description**.

Battery Energy Storage System

The project would include a battery storage system capable of storing up to 1,150 MW of electricity for 4 hours (4,600 MW-hours), requiring up to 35 acres of land. As shown in **Figure 3-2** in the **Section 3, Project Description**, the battery system would be located near the project substation to facilitate interconnection and metering. The BESS would also include a battery management system to control the charging/discharging of the batteries. The project would use commercially available battery technology such as lithium ion, lithium iron phosphate, nickel manganese cobalt, and nickel cobalt aluminum batteries.

Step-Up Substation

All collector feeder circuit voltages step up from 34.5 kV to 500 kV by the main transformers of the project’s substation. The substation consists of eight power and auxiliary transformers, nine 500 kV breakers, bus bars, low voltage switchgear, disconnect switches, capacitor banks, a grounding grid, microwave towers, dead-end structures up to 100 feet in height, chain link fence and other protection devices, etc. All project substation structures are grounded (RCI 2024k, Appendix E). A communication system would also be installed within the same footprint. The communication system comprises fiber optic communication cabling for the Supervisory Control and Data Acquisition (SCADA), which provides communication capabilities between substations, switchyard, and O&M facilities. (RCI 2024k, Appendix D and E, IP 2024a, Attachment 10)

Generation-Intertie Line

The 15 mile-long, 500 kV single-circuit gen-tie would be constructed with bundled 2x1590 Lapwing conductors with an approximate ampacity of 2,700. The gen-tie line would be built with either monopole tubular steel poles or steel H-frame structures. Gen tie structures would be 120 feet tall, with a maximum height of 200 feet. The project would utilize approximately 80 monopole or H-frame structures; the corridor of the gen-tie line is approximately 275 feet wide. All the gen-tie line structures are grounded. The

gen-tie line would facilitate interconnecting the project substation with the new PG&E utility switchyard. (RCI 2024k, Appendix D and E, IP 2024a, Attachment 10).

PG&E Utility Switchyard and Downstream Network Upgrades

PG&E Utility Switchyard

The switchyard includes two-bay, five high-voltage circuit breakers, disconnect switches, series capacitor banks, grounding grids, protection devices, bus support structures, Direct Transfer Trip (DTT) receivers, chain link fence around the switchyard, etc. The switchyard would be designed and constructed with a Breaker-and-a-half (BAAH) configuration. The application stated that the Los Banos-Midway 500 kV transmission line would loop in and out through the newly built switchyard and interconnect the project with the PG&E grid. However, a California ISO study indicated that the Manning-Midway 500 kV line would loop in and out of the PG&E switchyard. Looping transmission line would be supported by approximately eighteen (18) Tubular Steel Pole, Light-Duty Steel Pole, or Lattice Steel Tower structures. To complete the looping process, PG&E would remove two existing lattice steel towers and inter-set approximately six new structures along the Manning-Midway 500 kV line. It is assumed that the following interconnection would occur after installing the 500 kV Manning substation. The tallest structures at the switchyard would be the dead-end structures, which would be up to 175 feet above ground level and terminate the 500 kV gen-tie and utility 500 kV loop-in and outlines. All the switchyard structures are grounded. The applicant would own, operate, and maintain the newly built 500kV project substation and gen-tie. The switchyard will be constructed by the applicant and transferred to PG&E for operation and maintenance purposes. (See **Project Description Figure 3-2**) (RCI 2024ee, Figure 2-3a through 2-3h, RCI 2024k, Appendix D and E, IP 2024a, Attachment 10)

All Cluster 14 asynchronous projects were modeled with reactive capabilities to meet the requirements (0.95 lead/lag dynamic at the high side of the station transformer). A reliability thermal analysis was performed on power flow cases, including all energy-only and full-capacity projects dispatched to maximum values. Congestion management is relied upon for mitigation where applicable.

Steady State Thermal Overloads

The Cluster C14 Phase II PG&E South 500 Interconnection area study report does not propose network upgrades. Although some contingencies in post-cluster projects had steady-state thermal overload violations, the study concluded that congestion management would mitigate the risk.

Bus Flow Analysis

A bus flow power flow analysis was performed to determine if there are any thermal overloads on equipment inside a substation that is not already monitored in the reliability thermal loading analysis. Substation equipment is considered thermally

overloaded if the power flow loading is greater than or equal to 100% of the equipment's current rating. The project has some potential impacts on the loading of buses and switching devices. Mitigation measures are discussed in the Mitigation Proposed section below.

Steady State Voltage

The Cluster C14 Phase II PG&E South 500 Interconnection area study report does not propose network upgrades. Although the study showed that some Cluster 14 projects may experience high/low voltages and/or voltage deviations, the study also concluded that the interconnection customers can manage their project's plant voltages within equipment tolerances.

Post-transient voltage

A post-transient voltage analysis was not performed.

Reactive Power Deficiency

A reactive power deficiency analysis was not performed.

Transient Stability Analysis

No network upgrades are proposed. Disturbance simulations were performed for a 20-second study period for selected category P2, P4, and P7 (loss of multiple elements) outages.

Short Circuit Duty Analysis

Short Circuit studies were conducted on the projects in Cluster C14 Phase II PG&E South 500 Interconnection area, including the DCEP project. The study indicated that the PG&E circuit breakers cannot handle the new Cluster C14 Phase II PG&E South 500 Interconnection area projects. The study has proposed the following mitigations.

Mitigation Proposed

The phase 2 study recommended the following mitigation measures due to fault duty increases, thermal overload violations, and reactive Var deficiencies of the PG&E facilities (IP 2024a – Intersect Power (TN 256295), Appendix A, E, G, and I):

- General Reliability Network Upgrades (GRNU)-During the P2-3 contingency analysis, Midway 500kV Circuit Breaker 712 was overloaded by 119%.
Mitigation-Replace Midway 500kV CB712, switches, and jumpers to achieve 4000 A. normal rating.
- Precursor Network Upgrade (PNU): During the P2-P3 contingency analysis, Midway 500kV Switch 721 and 723 were overloaded by 120%.
Mitigation-Replace Midway 500kV Switch 731 and 723 to achieve 4000 A normal rating. Switches and jumpers to accomplish a 4000 A normal rating.

- GRNU-Los Banos 500kV Circuit Breakers (822,832 and 842) were overstressed by 1.156 per unit (pu) value.

Mitigation-Replace all the three Circuit Breakers.

- Conditionally Assigned Network Upgrade (CANU)-Midway 230kV Bus was overstressed by 0.89 pu.

Mitigation-Install 2X16 ohm series bus reactors between Midway substations. 230kV bus sections D and E (16 ohm parallel/8-ohm net)

- GRNU-Midway 500kV CB 742,822,912 942 were overstressed beyond 50kA.

Mitigation-Replace Midway 500kV Circuit Breakers

- GRNU- Midway 500 kV CB 742, 822, 912, 942 overstress beyond 50 kA

Mitigation- Replace Midway 500 kV CB 742, 822, 912, 942

- GRNU-Tesla 230 kV Bus D was overstressed by 1.011 pu.

Mitigation-Relocate a Tesla - Tracy #2 230kV line to Bus Sect. C - into BAAH bay position where Newark #2 line resides today. Newark #2 will shift to a new BAAH bay.

- PNU- Gates 230 kV Bus Overstress by 0.8522 pu.

Mitigation- Install series bus reactors between Gates Bus Sections E & F

- PNU- Los Banos 230 kV CB 252 & 262 were overstressed

Mitigation—Relocate CB 262, 242, and 252 and their line terminals to the new 230 kV BAAH bus section. If we only move one line, the 242 and 252-line terminals would be crossed.

- PNU-Los Banos 230kV CBs 212 and 222 were overstressed.

Mitigation-Replace Los Banos 230kV circuit breakers 212 and 222

- PNU-Los Banos 230kV BAAH Bus Section

Mitigation-Needed for CB 262 overstress GRNU

- Midway 230kV Bus D BAAH conversion.

Mitigation-Needed to install reactors between Bus sections D&E (CANU mitigation)

- PNU-Panoche 230kV bus has overstressed above 40kA design, and CBs 212,232,242,252,262,272,282,292,302,312,332,412, and 422 were overstressed.

Mitigation-Convert Panoche 230kV Buse D to BAAH and replace Bus E overstressed CBs.

- PNU-Tesla 230kV Bus was overstressed by 1.0112 pu

Upgrade series bus reactors between Tesla 230kV Bus sections C&D and D&E

- PNU-Tesla 500kV CB 532,612 and 642 CBs were overstressed by 1.3081 pu.

Mitigation-Replace Tesla 500kV CB 542, 612, and 642

Transmission Planning Process (TPP)

Construct New Manning 500kV substation

Interconnection Reliability Network Upgrades (IRNU)

- Construct the project's new BAAH PG&E switching station and SS series capacitors.
- Los Banos Sub- new MW terminal and DTT
- Midway Sub-Shunt Reactor, DTT, Relay Replacement
- Gates Sub-Modify Series Capacitors
- Manning-Midway transmission line loop-in and fiber install for communication circuits

Sub-synchronous Resonance (SSR) Analysis

Certain generators or inverter-based generators, when interconnected within the electrical proximity of series capacitor banks on the transmission system, are susceptible to sub-synchronous Interaction conditions, which must be evaluated.

- An SSR analysis should be conducted. The results should be evaluated, and electromagnetic transient (EMT) models should be submitted to PG&E by the applicant at least one year before the initial synchronization of the project. If any mitigation is required, it should be in service before the initial synchronization of the project. Perhaps there is a need for a network upgrade.

Deliverability Assessment Results and Mitigation Proposed

On peak Deliverability Local. No violations occurred.

Off-peak Deliverability Local. No violations occurred.

On-peak Deliverability Area (Summer Peak). Some criteria violations occurred due to Cluster C14 Phase II PG&E South 500 Interconnection Area projects.

- Under P1 contingency analysis, the Gates-Manning 500 kV line was overloaded by 137% due to an outage of Manning Switching station #2 bay.

Mitigation-construct New Diablo-Midway #4 500kV line.

- Under P1 contingency analysis, Gates-Panoche 230kV line #1 and Gates-Panoche 230kV line #2 were overloaded 154% due to outage of Manning-Gates 500kV line.

Mitigation-Reconductor Gates-Panoche #1 and #2 230kV lines

Off-peak Deliverability Area. No violations occurred due.

4.3.3 Applicable LORS and Project Conformance

Table 4.3-1 below details staff’s determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection at the end of this section, “Staff Proposed Conditions of Certification,” contains the full text of the referenced conditions of certification.

TABLE 4.3-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
Federal/Regional	
Federal Energy Regulatory Commission (FERC) /North American Electric Reliability Council (NERC)	Yes. The proposed interconnection facilities would comply with Federal/Regional regulations. COC TSE-5 would require the submittal of any updates to the Large Generator Interconnection Agreement (LGIA) at least 30 days before the construction of transmission facilities.
NERC/WECC Planning Standards: The Western Electricity Coordinating Council (WECC) Planning Standards	Yes. The proposed interconnection facilities would comply with Federal/Regional regulations. COC TSE-5 would require the submittal of any updates to the LGIA at least 30 days before the construction of transmission facilities.
State	
California Public Utilities Commission (CPUC) General Order 95 (GO-95)	Yes. The proposed overhead collector lines and generator tie-line would comply with CPUC GO-95. Compliance with COC TSE-4 requires power plant switchyard, outlet line, and termination compliance with GO-95.
CPUC General Order 128 (GO-128)	Yes. The proposed underground collector lines would comply with CPUC GO-128. Compliance with COC TSE-4 requires power plant switchyard, outlet line, and termination compliance with GO-128.
General	
National Electric Safety Code 2023 (NESC)	Yes. The proposed overhead collector lines, underground collector lines, and generator tie-line would comply with NESC. Compliance with COC TSE-4 requires power plant switchyard, outlet line, and termination compliance with NESC.
Local	
PG&E Regulation and standard	Yes. The proposed overhead generator tie-line would comply with PG&E Regulation for Clearance Requirements for Power Line Corridors. Compliance with COC TSE-5 and TSE-6 requires overhead conductor compliance with PG&E Regulation.

4.3.4 Conclusions and Recommendations

As discussed above, implementing the proposed COCs would reliably and safely interconnect the project to the transmission grid. CEC staff recommends adopting the COCs, as detailed in subsection "4.3.5 Proposed Conditions of Certification" below.

The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

4.3.5 Proposed Conditions of Certification

The proposed COCs include measures to conform to applicable LORS and ensure that the DCEP is reliably and safely interconnected to the PG&E transmission grid.

TSE-1 The project owner shall furnish the Compliance Project Manager (CPM) and the Delegate Chief Building Official (DCBO) with a transmission facility design submittals schedule, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and major structures and equipment specifications. To facilitate audits by CEC staff, the project owner shall provide designated packages to the CPM when requested.

Verification: Before the start of construction, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the DCBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with CPM and DCBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

TABLE 1: MAJOR EQUIPMENT LIST

Breakers

Step-up transformer

Switchyard

Busses

Surge arrestors

Disconnects

Take-off facilities

Electrical control building

Switchyard control building

Transmission pole/tower

Grounding system

TSE-2 Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:

- a. a civil engineer.
- b. a geotechnical engineer or a civil engineer experienced and knowledgeable in soil engineering.
- c. a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or
- d. a mechanical engineer (Business and Professions Code Sections 6704 et seq. require state registration to practice as a civil or structural engineer in California).

The tasks performed by the civil, geotechnical, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular project segment, e.g., proposed earthwork, civil structures, power plant structures, or equipment support. Each segment of the project shall have at most one responsible engineer. The transmission line may be the responsibility of a separate California-registered electrical engineer. The civil, geotechnical, or civil and design engineer, assigned as required by Facility Design Condition **GEN-5**, may be responsible for the design and review of the TSE facilities.

For review and approval, the project owner shall submit to the DCBO the names, qualifications, and registration numbers of all engineers assigned to the project. Suppose any one of the designated engineers is subsequently reassigned or replaced. In that case, the project owner shall submit the newly assigned engineer's name, qualifications, and registration number to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and require changes if site conditions are unsafe or do not conform with the predicted conditions used as the basis for the design of earthwork or foundations.

The electrical engineer shall:

1. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities and
2. sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: Before the start of rough grading, the project owner shall submit the names, qualifications, and registration numbers of all the responsible engineers assigned to the project to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approvals of the engineers within five days of the approval.

Suppose the designated responsible engineer is subsequently reassigned or replaced. In that case, the project owner has five days to submit the newly assigned engineer's name, qualifications, and registration number to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

TSE-3 If any design and construction discrepancy is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. The discrepancy documentation shall become a controlled document and shall be submitted to the DCBO for review and approval, which refers to this condition of certification.

Verification: The project owner shall submit a copy of the DCBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days of the reason for the disapproval, along with the revised corrective action required to obtain the DCBO's approval.

TSE-4 For the power plant switchyard, outlet line, and termination, the project owner shall not begin any construction until plans for that increment of construction have been approved by the DCBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the monthly compliance report:

- a. receipt or delay of major electrical equipment.
- b. testing or energization of major electrical equipment; and
- c. the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: Before the start of each increment of construction, the project owner shall submit to the DCBO for review and approval the final design plans, specifications, and calculations for equipment and systems of the power plant switchyard, outlet line, and termination, including a copy of the signed and stamped statement from the responsible electrical engineer verifying compliance with all applicable LORS, and send the CPM a copy of the transmittal letter in the next monthly compliance report.

TSE-5 The project owner shall ensure that the proposed transmission facilities' design, construction, and operation conform to all applicable LORS and the below-mentioned requirements. The project owner shall submit the required copies of the design drawings and calculations determined by the DCBO. Once approved, the project owner shall inform the CPM and DCBO of any anticipated changes to

the design and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the shift in the CPM and DCBO for review and approval.

- a. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, National Electric Code (NEC) and related industry standards, and the California Independent System Operator (California ISO) Interconnection Procedures.
- b. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
- c. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
- d. The project conductors shall be sized to accommodate the project's total output.
- e. Termination facilities shall comply with applicable PG&E interconnection standards.
- f. The project owner shall provide to the CPM:
 - i. The Special Protection System sequencing and timing, if applicable,
 - ii. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable if applicable,
 - iii. Any updates to the executed LGIA signed by the PG&E and the project owner.

Verification: Before the start of construction or start of modification of transmission facilities, the project owner shall submit to the DCBO for approval:

- a. Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36, and 37 of the *High Voltage Electric Safety Orders*, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.
- b. For each element of the transmission facilities identified above, the submittal package to the DCBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"¹ and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission

- element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, PG&E standards, National Electric Code (NEC), and related industry standards.
- c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements **TSE-5** a through f.
 - d. The Generator Special Facilities Agreement shall be provided concurrently to the CPM and DCBO. The project owner shall identify and justify the substitution of equipment and substation configurations for DCBO and CPM approval.
 - e. Any changes or updates to the executed LGIA signed by the PG&E and the project owner.
 - f. Before the construction of any project modification requiring approval of the PG&E, provide the interconnection approval to the CPM. Interconnection approval for modification of existing facilities can be in the form of an approved Material Modification or approval of the proposed changes to the project and the existing interconnection facilities. Within 15 days after the cessation of construction, the project owner shall provide a statement to the CPM from the registered engineer in responsible charge (signed and sealed) that the switchyard and transmission facilities conform to the above-listed requirements.

TSE-6 The project owner shall provide the following Notice to the California Independent System Operator (California ISO) prior to synchronizing the facility with the California Transmission system:

- a. At least one week prior to synchronizing the facility with the grid for testing, provide the California ISO a letter stating the proposed date of synchronization; and
- b. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one week prior to initial synchronization with the grid. The project owner shall contact the California ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the California ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-7 The project owner shall inspect the transmission facilities during and after construction. Any subsequent CPM and DCBO approved changes to it to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders," applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and DCBO in writing within ten days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after the first synchronization of the project, the project owner shall transmit to the CPM and DCBO:

- a. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders," and applicable interconnection standards, NEC, related industry standards.
- b. An "as built" engineering description of the transmission facilities' mechanical, structural, and civil portion signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built," drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as outlined in the "Compliance Monitoring Plan."

4.3.6 References

CPUC 2006 – California Public Utilities Commission. General Order 128 (GO-128), Rules for Construction of Underground Electric Supply and Communications Systems, revised January 2006, ongoing. <https://www.cpuc.ca.gov/Home/Proceedings-and-Rulemaking/CPUC-general-orders>

CPUC 2020 – California Public Utilities Commission. General Order 95 (GO-95), Rules for Overhead Electric Line Construction, revised January 15, 2020, ongoing. <https://www.cpuc.ca.gov/Home/Proceedings-and-Rulemaking/CPUC-general-orders>

IP 2024a – Intersect Power (TN 256295). CAISO Phase II Study Confidentiality Request, dated 02-29-2024, dated May 10, 2024. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

IP 2024n – Intersect Power (TN 260642). Updated Project Description December 2024, dated December 13, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

NERC 2024 – North American Electric Reliability Council. 2024 Reliability Standards for the Bulk Electric Systems of North America, Updated January 1, 2024, and ongoing. <https://www.nerc.com/Pages/default.aspx>

- RCI 2023ee – Rincon Consultants, Inc. (TN 252984). Chapter 1 Executive Summary dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024k – Ricon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2, dated March 15, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Ricon Consultants, Inc. (TN 256296). Data Request Response Set 4, dated May 10, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ee – Rincon Consultants, Inc. (TN 259509). Updated Darden Clean Energy Project Description, dated October 9, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- WECC 2024 – Western Electricity Coordinating Council. WECC Regional Reliability Standards, updated on December 10, 2014, and is ongoing.
<https://www.wecc.org/>

4.3.7 Definition of Terms

ACSR	Aluminum conductor steel-reinforced
Ampacity	Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, where damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.
Ampere	The unit of current flowing in a conductor
Bus	Conductors that serve as a common connection for two or more circuits
Conductor	The part of the transmission line (the wire) that carries the current.
Congestion Management	A scheduling protocol that ensures dispatched generation and transmission loading (imports) will not violate criteria.
Double Contingency	Also known as an emergency or N-2 condition, an N-2 contingency occurs when a forced outage of two system

	elements occurs—usually (but not exclusively) caused by one event. Examples of an N-2 contingency include the loss of two transmission circuits on a single tower line or the loss of two elements connected by a common circuit breaker due to the failure of that common breaker.
Emergency Overload	See Single Contingency condition. This is also called an N-1
Kcmil or KCM	Thousand circular mils. A unit of the conductor's cross-sectional area; when divided by 1,273, the area in square inches is obtained.
Kilovolt (kV)	A unit of potential difference, or voltage, between two conductors of a circuit or between a conductor and the ground
Loop	An electrical cul de sac. A transmission configuration that interrupts an existing circuit diverts it to another connection and returns it to the interrupted circuit, thus forming a loop or cul de sac
Megavar	One megavolt ampere reactive
Megavars	Mega-volt-ampere-reactive. One million volt-ampere-reactive. Reactive power is generally associated with the reactive nature of motor loads that generation units must feed into the system
Megavolt Ampere (MVA)	A unit of apparent power equals the product of the line voltage in kilovolts, current in amperes, the square root of 3, divided by 1,000
Megawatt (MW)	A unit of power equivalent to 1,341 horsepower
N-0 Condition	See Normal Operation/Normal Overload, below
Normal Operation/ Normal Overload (N-0)	When all customers receive the power, they are entitled to it without interruption and at a steady voltage, and

	no element of the transmission system is loaded beyond its continuous rating
N-1 Condition	See Single Contingency, below
N-2 Condition	See Double Contingency, above
Outlet	Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation facilities with the main grid
Power Flow Analysis	A power flow analysis is a forward-looking computer simulation of all generation and transmission system facilities that identify overloaded circuits, transformers, and other equipment and system voltage levels.
Reactive Power	Reactive power is generally associated with the reactive nature of motor loads that generation units must feed into the system. An adequate supply of reactive power is required to maintain system voltage levels.
Remedial Action Scheme	A remedial action scheme is an automatic control provision that, as one example, will trip a selected generating unit when a circuit overloads.
Single Contingency	Also known as an emergency or N-1 condition occurs when one major transmission element (circuit, transformer, circuit breaker, etc.) or one generator is out of service.
Special Protection Scheme/System	Detects a transmission outage (either a single or credible multiple contingencies) or an overloaded transmission facility and then trips or runs back generation output to avoid potential overloaded facilities or other criteria violations
Switchyard	A power plant switchyard is an integral part of a power plant used as an outlet for one or more electric generators.
Thermal Rating	See ampacity.
TSE	Transmission System Engineering

4.4 Worker Safety and Fire Protection

4.4.1 Setting

Existing Conditions

The proposed Darden Clean Energy Project (DCEP or project) would be located on approximately 9,500 acres of unincorporated retired agricultural land in Fresno County to the south of the town of Cantua Creek. The solar facility of approximately 3.1 million photovoltaic panels, Battery Energy Storage System (BESS), and substation would be located on approximately 9,100 acres of land currently owned by Westlands Water District (WWD), between South Sonoma Avenue to the west and South Butte Avenue to the east. The project's gen-tie line would span west from the intersection of South Sonoma Avenue and West Harlan Avenue to immediately west of Interstate 5, where it would connect to the new utility switchyard along Pacific Gas and Electric Company's (PG&E) Los Banos-Midway #2 500 kV transmission line.

The project site would be served by the Fresno County Fire Protection District (FCFPD) and by the California Department of Forestry and Fire Protection (CAL FIRE) as a jointly run entity under a single Fire Chief and administrative network due to a contract between Fresno County and CAL FIRE. The project would be served first by the nearest FCFPD station 95 located in the community of Tranquility (~8 miles north at 25101 West Morton Avenue).

Regulatory

Worker safety and fire protection are regulated through laws, ordinances, regulations, and standards (LORS), at the federal, state, and local levels. Workers at an energy facility operate equipment and handle hazardous materials and may face hazards that can result in accidents and serious injury. Protective measures are employed to eliminate or reduce these hazards or to minimize the risk through special training, protective equipment, and procedural controls.

Federal

Occupational Safety and Health Act. The Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (Title 29, Code of Federal Regulations, Section 1910.95) designed to protect workers. Employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure. The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. These sections contain requirements to protect worker health and safety in the general industry and construction industry.

These regulations also address requirements to protect workers in emergency situations. They are designed primarily to protect worker health but also contain requirements that affect general workplace safety. The administering agencies for the above authority are Federal and State OSHA and the California Occupational Safety and Health Administration (Cal OSHA), respectively. As required by 29 Code of Federal Regulation (CFR) 1910, an employer must have an Emergency Action Plan whenever an OSHA standard in Part 1910 requires one. The Emergency Action Plan must be in writing, kept in the workplace, and available to employees for review, unless there are 10 or fewer employees. The Emergency Action Plan must contain procedures for reporting, procedures for emergency evacuation, procedures for employees who remain for critical plant operations, procedures to account for employees following evacuation, procedures if rescue and medical duties are required, and identified persons who can provide more information to employees.

National Institute of Occupational Safety and Health (NIOSH). NIOSH was established by the Occupational Safety and Health Act of 1970. NIOSH studies worker health and safety and develops safe work practices, testing protocols, and makes recommendations to OSHA to continually improve workplace practices.

Federal Aviation Administration (FAA) Regulations. FAA Regulations 14 CFR Part 91 (General Operating and Flight Rules) and Part 133 (Rotorcraft External-Load Operations) govern the use of helicopters; in this case during construction and operations maintenance of certain electrical components of the gen-tie line and downstream upgrades.

State

California Occupational Safety and Health Administration. Cal OSHA is the primary agency responsible for worker safety related to the handling and use of chemicals in the workplace. Cal OSHA standards are generally more stringent than federal regulations. Employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Title 8, California Code of Regulations (CCR), §§ 337 to 340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. It also includes the Construction Safety Orders (Title 8, CCR, §§ 1500 to 1962) and the General Industry Safety Orders (Title 8, CCR, §§ 3200 to 6184).

The California Fire Code (CFC). California Health and Safety Code Sections 13145 and 13146 also require that every city, county, or city and county fire department or district providing fire protection services to enforce building standards adopted by the State Fire Marshal and other regulations of the State Fire Marshal. Additionally, the CFC was amended in July 2024 to add regulations (Chapter 12 Energy Systems) governing BESS placement and operations in California.

California Public Utilities Code (CPUC or Commission) 761.3 Section (g).

Senate Bill (SB) 38 (Laird 2023) added safety requirements for battery storage projects. It requires every battery energy storage facility in California to have an emergency response and emergency action plan that covers the premises of the facility and is consistent with emergency action plans in Title 8, CCR. The owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the county and, if applicable, the city where the facility is located.

California Public Utilities Commission's General Order (GO) 167-C. This order establishes standards to enhance safety of Battery Energy Storage Facilities and orders that they are effectively maintained and operated to ensure safe and reliable service.

California Health and Safety Code, Sections 25500-25541. The California Health and Safety Code, Sections 25500 through 25541 requires local governments to regulate local business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit an HMBP to their local Certified Unified Program Agency (CUPA) and to report releases to their CUPA and the State Office of Emergency Services.

Hazardous Materials Business Plan. The designated CUPA for the project is the Fresno County Environmental Health Department. The Hazardous Materials Compliance Program oversees the state- mandated programs in Fresno County. The Hazardous Materials Business Plan fulfills the requirements of the California Health and Safety Code, Sections 2550, et seq., and the related regulations of 19 CCR 2620 et seq.

Local

Fresno County Code of Ordinances. The FCFPD follows the 2024 CFC to implement local fire protection and emergency services. The CFC is based on the 2021 International Fire Code (IFC) with amendments that became effective in July 2024. In 2023, Fresno County adopted County Code 15.10 which incorporated Title 15 Buildings and Construction into the Fresno County Code of Ordinances (County Code). The Fresno County Code includes requirements related to worker health and safety. County Code Title 8 Health and Safety and Title 15 Building and Construction contain general and construction health requirements to reduce hazard potential to employees.

Combustible Substances and Smoking Restrictions – Chapter 8.32. To regulate the accumulation of combustible materials and smoking in specified areas to minimize the risk of fire hazards.

Noise Control – Chapter 8.40. To regulate noise levels to protect public health, welfare, and safety and warn of the hazards of excessive noise.

Fire Code – Chapter 15.10. The County Code adopts the California Fire Code with specific revisions.

Electrical Code – Chapter 15.16. The County Code adopts the California Electrical Code with specific revisions.

Fresno County General Plan

The Fresno County General Plan contains several policies that are applicable to worker health and safety.

Policies HS-A.1 through HS-A.13 – Emergency Management and Response. To protect public health and safety by preparing for, responding to, and recovering from the effects of natural or technological disasters.

Policies HS-B.1 through HS-B.31 – Fire Hazards. To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

Policies HS-F.1 through HS-F.8 – Hazardous Materials. To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

Policies HS-H.1 through HS-H.10 – Noise. To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.

Cumulative

Staff reviewed the potential for the construction and operation of the DCEP combined with existing industrial facilities and expected new energy facilities in the vicinity to result in impacts on the fire and emergency service capabilities of the FCFPD (**Appendix A, Table A-1**). Of those projects, staff identified 17 energy-related projects additional to the Darden project that could cause a cumulative impact to the FCFPD.

These projects are:

- FC-5: WTC Riverdale, LLC – Dairy Digester/Connection renewable natural gas.
- FC-6: Seneca Resources Corporation – Oil and Gas Exploration/ Production.
- FC-7: Landfill Gas Conditioning System & Pipeline.
- FC-9: Heartland Hydrogen Project – electrolytic hydrogen fuel generation facility using treated wastewater and on-site generation of solar PV energy; capable of producing ~30,000 kg/day of renewable hydrogen for zero-emission transportation fuel.
- FC-12: Scarlet Solar – 400 MW PV solar facility with 400 MW energy storage system on 4,089 acres.

- FC-13: Sonrisa Solar Project – 200 MW PV solar facility with battery storage capacity of 100 megawatts on approximately 2,000 acres.
- FC-14: Tranquility Solar Project – 200 MW solar facility on 3,732 acres.
- FC-15: Luna Valley Solar – 200 MW solar facility and energy storage on 1,252 acres.
- FC-16: H2B2 USA, LLC, Project – Solar and battery storage facility on 60 acres.
- FC-18: Five Points Pipeline, LLC, Project – dairy gas digester facility and pipeline.
- WWD-1: Westlands Solar Park (WSP)¹ – A series of utility-scale solar photovoltaic (PV) energy generating facilities on about 21,000 acres which would produce 2,000 megawatts (MW) through the implementation of individual solar projects in 12 subareas which are all adjacent to each other.
- WWD-2: Valley Clean Infrastructure Plan (VCIP)² – A plan that would allow for the construction of solar facilities and electric transmission infrastructure with the potential to provide 20,000 MW of solar energy and energy storage.
- FC-25: BayWa.r.e/Cornucopia Hybrid Solar Project – CUP 3777: Hybrid solar and battery energy storage on about 1,600 acres.
- FC-26: Manning 500/230 kV Substation Project – Construction of the 500/230 kV Manning substation and approximately ten miles of new 230 kV overhead transmission lines from the new Manning substation to PG&E's Tranquility substation.
- FC-27: CES Electron Farm One – 6.4 MW solar facility and associated equipment on 40 acres.
- FC 28: San Luis West Solar Project – 770 acres of solar panels and associated infrastructure, including the Project substation, BESS, operations and maintenance building.
- FC 30: Key Energy Storage – Up to 3 gigawatts of lithium-ion battery energy storage or a combination of lithium-ion and iron-flow storage technology. The Project would not generate electricity.

4.4.2 Impacts

Worker safety and fire protection are regulated through laws, ordinances, regulations, and standards (LORS), at the federal, state, and local levels. Workers at the proposed facility would operate equipment and handle hazardous materials and may face hazards that can result in accidents and serious injury. Protective measures are employed to

1 Although greater than 15 miles from the project site, the Westlands Solar Park is included within the cumulative projects list due to the size and regional significance.

2 The location and ultimate size of this potential cumulative project is not currently known; therefore, while it is included in this Cumulative Projects List, it would be speculative to complete analysis of this potential cumulative project because of the multiple unknown variables and data involved.

eliminate or reduce these hazards or to minimize the risk through special training, protective equipment, and procedural controls.

The purpose of this analysis is to assess whether the worker safety and fire protection measures proposed by the applicant are adequate to:

- comply with applicable safety LORS;
- protect the workers during construction, commissioning, and operation of the facility;
- protect against fire; and
- provide adequate emergency response procedures.

Worker Safety

Industrial environments are potentially dangerous during construction, commissioning, operation, and decommissioning of facilities. Workers at the proposed project would be exposed to loud noises, moving equipment, trenching/excavation accidents, electrical hazards, battery fires, herbicides during and after applications, and working with helicopters. The workers could experience falls, trips, burns, lacerations, being struck by objects, and numerous other potential injuries. Well-defined policies and procedures, training, and hazard recognition and control at the facility are important to minimize such hazards and protect workers. Compliance with applicable LORS would help ensure workers would be adequately protected from health and safety hazards.

A Construction Safety and Health Program and an Operations and Maintenance Safety and Health Program would be prepared by the applicant to minimize worker hazards during construction and operation. California Energy Commission (CEC) staff uses the phrase "Safety and Health Program" to refer to the measures that would be taken to ensure compliance with the applicable LORS during the construction and operational phases of the project.

Construction Safety and Health Program

The project encompasses construction and operation of approximately 3.1 million photovoltaic (PV) panels, a BESS, a step-up substation, a gen-tie line and a utility switchyard. Workers would be exposed to hazards including physical, chemical, biological and general construction hazards.

The construction of the project solar arrays would consist of several steps that would create different safety hazards for workers. Since the PV panels would be manufactured at an off-site location and transported to the project site, only the transport and off-loading of the panels present a safety hazard. Gloves would always be worn to protect against abrasions and cuts. The structures supporting the PV panel arrays would consist of steel piles (e.g., cylindrical pipes, H-beams, or similar) driven into the soil using pneumatic techniques, similar to a hydraulic pile driver. Safety hazards could consist of

pile driving activities, electrified PV panels, and associated electrified wiring/cables between the panels, arrays, and inverters.

Direct current (DC) lines from PV sub-arrays would be installed in conduits, the lines would be collected and combined and routed to the inverters via electrical collector boxes. Final sections would be connected to the inverters via underground conduits thus presenting numerous shallow trench tripping hazards. Electrical inverters would be placed on steel skids, elevated as necessary with steel piles to allow for runoff to flow beneath the inverter structures. Cabling from the inverters to the step-up substation and would be installed either primarily underground, or overhead along panel strings to avoid the need for underground cabling and trenching, where required. At the end of panel strings, cables would be combined and routed overhead on wood poles roughly 30 to 50 feet high, depending on voltage. Trenches for the 34.5 kV collector lines would be run from the inverters to the on-site step-up substation. These trenches could be 4 to 6 feet in depth and could require shoring or sloping depending upon the soils. Installation would consist of the following basic steps:

- Deliver new poles to installation sites
- Auger new hole using line truck attachment to a depth of up to 40 feet and include concrete supports depending on final engineering
- Pour concrete foundation
- Install bottom pole section by line truck, crane, or helicopter
- Install top pole section(s) by line truck, crane, or helicopter, if required

Once poles are erected, the 500 kV conductor would be strung generally using a wire truck, crane and/or helicopter, thus requiring adherence to CCR, tit. 8, sections 1901 to 1909 if helicopters are used; because helicopter use is being proposed, a Helicopter Code of Safe Practices must be developed and followed.

Construction Safety Orders applicable to project construction discussed above are promulgated by Cal OSHA and are published at CCR, title 8, sections 1502, et seq. The Construction Safety and Health Program would include the following major programs:

- Construction Injury and Illness Prevention Program (CCR, tit. 8, § 1509)
- Construction Fire Prevention Plan (CCR, tit. 8, § 1920)
- Personal Protective Equipment Program (CCR, tit. 8, §§ 1514 to 1522)
- Construction Hazardous Materials Business Plan
- Construction Spill Prevention, Control, and Countermeasure Plan (in accordance with section 311 of the Clean Water Act)
- Construction Soil Management Plan

- Construction Emergency Action Program and Plan (CCR, tit. 8, § 3220)
- Helicopter Code of Safe Practices (CCR, tit. 8, § 1901)

Additional programs under General Industry Safety Orders (CCR, tit. 8, §§ 3200 to 6184), Electrical Safety Orders (CCR, tit. 8, §§ 2299 to 2974) include various safety and health programs.

The application adequately outlined the Construction Safety and Health Program for the project. However, outlining the appropriate elements of the plan does not ensure compliance with the program. Therefore, staff proposes Condition of Certification (COC) **WORKER SAFETY-1**, which would require the project owner to identify and provide the required elements and detailed plans of the Construction and Health Safety Program to the Compliance Project Manager (CPM) for approval and to the FCFPD for review and comment prior to the start of construction of the project.

Operations and Maintenance Safety and Health Program

Prior to the start of commissioning and operations at project, the Operations and Maintenance Safety and Health Program would be prepared. This operational safety program would include the following major programs and plans:

- Injury and Illness Prevention Program (CCR, tit. 8, § 3203)
- Fire Protection and Prevention Program (CCR, tit. 8, § 3221)
- Fire Protection System Impairment Program (2020 National Fire Protection Association (NFPA) 850 Section 17.4.2 & Chapter 9 CFC Sections 901.7, 901.7.1-901.7.6)
- Personal Protective Equipment Program (CCR, tit. 8, §§ 3401 to 3411)
- Emergency Action Plan (CCR, tit. 8, § 3220)
- Hazardous Materials Business Plan
- Spill Prevention, Control and Countermeasure Plan

In addition, the requirements under General Industry Safety Orders (CCR, tit. 8, §§ 3200 to 6184) and Electrical Safety Orders (CCR, tit. 8, §§ 2299 to 2974) would be applicable to this project. In addition, the use of herbicides to control vegetation growth near the solar panels would require adherence to 8 CCR § 5155 and other relevant sections regarding worker exposure to toxic substances.

The application also adequately outlined the Operations and Maintenance Safety and Health Program for the project. However, outlining the appropriate elements of the plan does not ensure compliance with the program. Therefore, staff proposes COC **WORKER SAFETY-2** which would make it a requirement to identify and provide elements and detailed plans of the Operation and Maintenance Health Safety Program

to the CPM for approval and to the FCFPD for review and comment prior to the start of construction of the project.

The measures in these plans would be derived from applicable sections of state and federal law. Both safety and health programs would comprise seven more specific programs and would require the major items detailed in the following paragraphs.

Injury and Illness Prevention Program. The Injury and Illness Prevention Program (IIPP) is a key worker safety and health program that identifies the person(s) with authority and responsibility for implementing the program, ensures that employees utilize safe and healthy work practices, identifies and evaluates workplace hazards and corrects them, and implements an employee training program.

Staff proposes that the applicant submit a final IIPP to the CPM for review and approval to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Fire Prevention Plan. CCR requires an Operations Fire Prevention Plan (CCR, tit. 8, § 3221). This regulation applies to all fire prevention plans required in the State of California and the requirements are detailed below:

- (a) Scope and Application. This section applies to all fire prevention plans. The fire prevention plan shall be in writing, except as provided in the last sentence of subsection (d)(2) of this section.
- (b) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:
 - (1) Potential fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;
 - (2) Names or regular job titles of those responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and
 - (3) Names or regular job titles of those responsible for the control of accumulation of flammable or combustible waste materials.
- (c) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.
- (d) Training:
 - (1) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.
 - (2) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the

employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

- (e) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed in the workplace to prevent accidental ignition of combustible materials.

Staff proposes that the applicant submit a final Fire Prevention Plan to the CPM for review and approval and to the FCFPD for review and comment to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Fire Protection System Impairment Program. NFPA 850 and the most current CFC lay out a prescriptive method that the project owner must follow when the facility's installed fire protection system is impaired. The plan would accomplish the following:

- supervise the safe shutdown of fire protection systems;
- provide notifications to the proper authorities and representatives;
- control potential fire hazards during the impairments through the use of fire watches and/or evacuation of the area effected;
- outline a repair strategy and timeline to get the fire protection system operational; and,
- restore the fire protection system to service as soon as possible.

A Fire Protection System Impairment Program would ensure that the project owner follows the prescriptive measures laid out in NFPA 850 and the CFC. Therefore, staff proposes that the applicant submit a final Fire Protection System Impairment Program to the CPM for review and approval, and to the FCFPD for review and comment, to satisfy proposed COC **WORKER SAFETY-2**.

Personal Protective Equipment Program. California regulations require Personal Protective Equipment (PPE) and first aid supplies whenever hazards are present that, due to process, environment, chemicals or mechanical irritants, can cause injury or impair bodily function as a result of absorption, inhalation, or physical contact (CCR, tit. 8, §§ 3380 to 3400).

All safety equipment must meet NIOSH or American National Standards Institute (ANSI) standards and would carry markings, numbers, or certificates of approval. Respirators must meet NIOSH and Cal OSHA standards. Each employee must be provided with the following information pertaining to, among other requirements, the use and maintenance of protective clothing, when to use the protective equipment, and when and how to replace the protective clothing and equipment.

The PPE Program ensures that employers comply with the applicable requirements for PPE and provides employees with the information and training necessary to protect them from potential workplace hazards.

CEC staff proposes that the applicant submit a final PPE Program to the CPM for review and approval to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Emergency Action Plan. California regulations require an Emergency Action Plan (CCR, tit. 8, § 3220).

An Emergency Action Plan must be designed to accomplish the following:

- establish emergency escape procedures and emergency escape route for the facility;
- determine procedures to be followed by employees who remain to operate critical project operations before they evacuate;
- provide procedures to account for all employees and visitors after emergency evacuation of the project has been completed;
- specify rescue and medical duties for assigned employees;
- identify fire and emergency reporting procedures to regulatory agencies;
- develop alarm and communication system for the facility;
- establish a list of personnel to contact for information on the plan contents; and
- determine and establish training and instruction requirements and programs.

CEC staff proposes that the applicant submit a final Emergency Action Plan to the CPM for review and approval and to the FCFPD for review and comment to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Hazardous Materials Business Plan. The California Hazardous Materials Release Response Plan and Inventory Law requires businesses that store or use hazardous materials to prepare a Hazardous Materials Business Plan (HMBP) and submit it to the CUPA. An HMBP includes details of a facility and business conducted at the site, an inventory of hazardous materials that are handled and stored on-site, an emergency response plan, and a safety and emergency response training program for new employees with an annual refresher course. Workers and first responders to any fire, rescue, or EMS emergency are thus aware of what hazardous materials are on the site and what precautions to take to avoid exposure.

CEC staff proposes that the applicant submit a final HMBP to the CPM for review and approval and to the FCFPD for review and comment to satisfy proposed COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.

Spill Prevention, Control and Countermeasure Plan (SPCC Plan). The aboveground petroleum storage act (ASPA) program requires tank facilities storing greater than 1,320 gallons of petroleum (crude oil, motor oil, diesel fuel, gasoline) to develop and implement the SPCC Plan requirements. A tank facility is any tank or tanks that are aboveground, including connected piping, that contain petroleum, has secondary containment, and it is used to hold petroleum products. The CUPA regulates businesses within its district. Workers and first responders to any fire, rescue, or EMS emergency are thus aware of what petroleum products are on the site and what precautions to take to avoid exposure due to the flammability, explosivity, and toxicity of these products. A SPCC Plan would limit the size of a spill and thus decrease risk to workers.

CEC staff proposes that the applicant submit a final SPCC Plan to the CPM for review and approval and to the FCFPD for review and comment to satisfy proposed COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.

Additional LORS called *safe work practices* apply to the project. The construction and operations safety programs would address safe work practices. The components of these programs include, but are not limited to, the programs found in the subsection "Construction Safety and Health Program".

Safety & Health Program Monitoring

Protecting construction workers from hazards is among the greatest challenges in occupational safety and health. These hazards increase in complexity in the multi-employer worksites typical of large, complex, industrial-type projects such as the construction of solar PV panels over an extremely large area and the placement and wiring of a large BESS. Safety concerns are further raised by the presence of solar PV panels that become electrified upon exposure to sunlight and BESS that arrive with at least 30 percent minimum charge. The standard industry practice of hiring a Construction Safety Supervisor is used to ensure a safe and healthful environment for personnel. This industry standard practice has reduced and/or eliminated hazards evident in the audits staff conducted of projects under construction. The federal OSHA has also entered into strategic alliances with several professional and trade organizations to promote and recognize safety professionals trained as Construction Safety Supervisors, Construction Health and Safety Officers, and other professional designations. The goal of these partnerships is to encourage construction subcontractors in four areas:

- to improve their safety and health performance;
- to assist them in striving for the elimination of the four hazards (falls, electrical, caught in/between, and struck-by hazards), which account for the majority of fatalities and injuries in this industry and have been the focus of targeted OSHA inspections;

- to prevent serious accidents in the construction industry through implementation of enhanced safety and health programs and increased employee training; and
- to recognize those subcontractors with exemplary safety and health programs.

To date, there are no OSHA or Cal OSHA requirements that an employer hire or provide for a Construction Safety Officer. OSHA and Cal OSHA regulations do, however, require that safety be provided by an employer and the term *Competent Person* is used in many OSHA and Cal OSHA standards, documents, and directives. A Competent Person is usually defined by OSHA as an individual who, by way of training and/or experience, is knowledgeable of standards, is capable of identifying workplace hazards relating to the specific operations, is designated by the employer, and has authority to take appropriate action. Therefore, to meet the intent of the OSHA standard to provide for a safe workplace during construction, CEC staff proposes COC **WORKER SAFETY-3**, which would require the project owner to designate and provide a site Construction Safety Supervisor.

Accidents, fires, and worker deaths are known to have occurred in the past due to the failure to recognize and control safety hazards and the inability to adequately supervise compliance with occupational safety and health regulations. Safety problems have been documented by CEC compliance staff in safety audits conducted at several projects under construction. Commonly documented findings include, but are not limited to, such safety oversights as:

- lack of posted confined space warning placards/signs;
- confusing and/or inadequate electrical and machinery lockout/tagout permitting and procedures;
- confusing and/or inappropriate procedures for handing over lockout/tagout and confined space permits from the construction team to commissioning team and then to operations;
- dangerous placement of hydraulic elevated platforms under each other;
- inappropriate placement of fire extinguishers near hot work;
- dangerous placement of numerous power cords in standing water on the site, thus increasing the risk of electrocution;
- inappropriate and unsecure placement of above-ground natural gas pipelines inside the facility, but too close to the perimeter fence; and
- lack of adequate employee- or contractor-written training programs addressing proper procedures to follow in the event of finding suspicious packages or objects either on or off site.

To reduce and/or eliminate these hazards, it is necessary for the CEC to have a professional Safety Monitor available to do on-site verification checks of ongoing compliance with Cal OSHA regulations and periodically audit safety compliance during

construction, commissioning, and the hand-over to operational status. These requirements are outlined in COC **WORKER SAFETY-4**. A Safety Monitor, hired by the project owner, yet reporting to the Delegate Chief Building Official (DCBO) and CPM, would serve as an “extra set of eyes” to ensure that safety procedures and practices are fully implemented at all projects certified by the CEC.

Health Hazards

Well Water Contamination. Another potential health hazard is the potential exposure to pesticides due to the historical over-use of them in the San Joaquin Valley, which includes the area of the WWD. Additionally, there is a risk due to the leaching of minerals in the soils such as selenium from the soils into the groundwater on the west side of the valley. Because the area of this project was a former agricultural area, the applicant conducted a Phase I and Phase II Environmental Site Assessment (ESA) (see **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire** for more discussion). However, the Phase II ESA did not sample all of the relevant locations on the project site. Staff requested additional surface soil and land sampling and analysis be completed. The results of the soil sampling did not find pesticides at levels of concern. However, the precise wells that would provide water to the project were not sampled and analyzed. The applicant has stated that water would be obtained from at least two wells (under the terms of a contract with the WWD) and would be the source of other on-site uses including dust suppression, the filling of the water tanks used for fire control, and possibly the filling of FCFPD tanks. In order to ensure that the water used for dust control is not heavily contaminated with metals, pesticides, or other hazardous substances, staff proposes COC **WORKER SAFETY-5** which would require the project owner to conduct laboratory analyses of the water proposed for dust control. This would ensure that a build-up of any contaminants (natural metals or applied pesticides) either dissolved or suspended in the groundwater would not increase to harmful amounts after being repeatedly applied daily to the ground for dust control during hot weather. Evaporation of the water could leave a residue of the toxic contaminants on the dirt roads which could then be picked up by the wind or vehicles as dust. This contaminated dust could then be inhaled or ingested by workers over time and lead to worker injury or illness.

Valley Fever. Coccidioidomycosis or "Valley Fever" (VF) is caused by inhaling the spores of the fungus *Coccidioides immitis*, which are released from the soil during soil disturbance (e.g., during construction activities) or wind erosion. Counties in California with the recent highest rate of infection include Fresno, Kern, Kings, Madera, and Tulare (California Department of Public Health 2024). The disease usually affects the lungs and can have potentially severe consequences, especially in at-risk individuals. Construction workers are often the most exposed population due to ground disturbing activities like trenching or excavating at construction sites. Treatment usually includes rest and antifungal medications. No effective vaccine currently exists for VF. Worker

exposures to VF are regulated by Cal OSHA in the following Cal OSHA sections (California Occupational Safety and Health Administration. 2024).

Applicable regulations with regard to VF protection and exposure can be found in the CCR, title 8, sections:

- Section 342 (Reporting Work-Connected Fatalities and Serious Injuries)
- Section 3203 (Injury and Illness Prevention)
- Section 5141 (Control of Harmful Exposures)
- Section 5144 (Respiratory Protection)
- Section 14300 (Employer Records-Log 300)
- Section 6709 (California Labor Code)

To further minimize potential exposure of workers and the public to coccidioidomycosis during soil excavation and grading, extensive wetting of the soil prior to and during construction activities should be employed and dust masks should be worn at certain times during these activities. Proposed COC **WORKER SAFETY-11** would require the project owner to develop and implement a VF Prevention and Response Plan that includes, among other requirements, that the dust control measures found in proposed COC **AQ-SC3** and **AQ-SC4** be supplemented with additional requirements, and that any worker who could be exposed to dust from soil disturbances in several named counties with high incidence of VF is trained before that work begins and annually thereafter.

Fire Hazards

During construction and operation of the project, there is the potential for both small fires and major structural fires. Electrical sparks and shorts, combustion of hydraulic fluid, mineral oil, insulating fluid, or flammable liquids and fuels, explosions, and over-heated equipment, could cause small fires or larger ones at the BESS location. The specific fire hazards for each project component are discussed in more detail below.

Solar Facility

Staff concurs with the project owner that the solar arrays and PV panels are fire-resistant because they are constructed largely of steel, glass, aluminum, or components housed within steel enclosures and are generally not vulnerable to ignition from wildland fires (see **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire** for more discussion). However, existing data demonstrates that grass fires have happened in areas of Fresno County with similar grasslands as the proposed project. The FCFPD frequently has running grass fires on the west side of the county that move fast and consume acres quickly due to the normal winds in the area. The FCFPD has reported two such fires recently in September 2024 (Dorado Fire - Jayne Avenue/El Dorado Incident #19399 – 502 acres and Palmer Fire – Palmer/Calaveras

Incident #19400 - 25 acres), east and northeast of Coalinga (CAL FIRE 2024a and 2024b). The FCFPD has concerns about threats of fires sparked from existing solar PV facilities or the proposed Darden Project solar PV arrays. And given the vast area (9,100 acres) of the proposed solar PV arrays, any grass fire that extends into neighboring properties, or vice versa, where the FCFPD could normally utilize defensive firing operations, those options might not be available due to the proximity of the solar facility. With a solar PV facility of this proposed size, the usual tactics in fighting vegetation fires near these facilities will need to adapt and change, which will cause the FCFPD to have to augment "change/add" resources to protect the facility. Even though the applicant has proposed a Vegetation Management Plan that includes mowing, using sheep to eat grasses (IP 2024n, p. 2-10), the pulling of weeds and grasses, and the application of herbicides when weeds get out of control (RCI 2023hh. Appendix V, pg. 12), the threat remains a concern.

During construction and operation, a fire hazard also exists when the inverters are energized due to potentially faulty equipment. During construction and commissioning, the project owner has stated that portable fire extinguishers would be placed throughout the site at appropriate intervals and inside vehicles. Safety procedures and training would be implemented according to the guidelines of both the Construction Fire Protection and Prevention Program and the Operations Fire Protection and Prevention Program, both of which would be reviewed and commented on by FCFPD and reviewed and approved by the CPM. Proposed COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** would make the above measures a requirement. However, even with the above plans in place, staff have witnessed inverter fires where personnel were trying to fight the fire with extinguishers even after the fire had progressed past the incipient stage. Therefore, staff proposes COC **WORKER SAFETY-6** which would ensure enhanced worker awareness and safety related to electrical fires.

O&M Facilities

Fire detection and suppression elements for the Operations & Maintenance buildings (O&M) which would accommodate staff members, storage areas, and parking would be consistent with the applicable provisions of the CFC. According to the application, "*the O&M buildings would likely be 65 feet by 80 feet and up to approximately 10,400 square feet in size. The O&M buildings would be constructed on a concrete foundation and be approximately 15 feet at its tallest point*" thus requiring sprinkler systems installed as per CFC and smoke detectors. These two buildings would also be equipped with portable fire extinguishers.

Fires and explosions of flammable welding gases or liquids are rare. Compliance with applicable LORS would be adequate to ensure protection from fire hazards related to the individual structures. The project owner plans to undertake fire prevention practices during construction and operations and prepare a project-specific Fire Prevention Plan. Access to the site for fire and other emergency vehicles shall be available at two separate locations via site personnel or locked gates. Emergency departments such as

the FCFPD, the Fresno County Sheriff, and the California Highway Patrol shall be given access to the locked gates via keys or any other means as described in both the construction and operations fire prevention plans described in COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.

BESS Facility

The project has proposed the use of the Tesla Mega Pack 2 XL (MPXL2) batteries for energy storage. These units are large containers similar in size to large ocean shipping containers and contain modules and battery cells. They are approximately 28.9 ft in length, 5.4 ft deep, 9.2 ft in height, and can weigh up to 84,000 pounds. The cells are the energy-producing units and contain a metal (lithium iron phosphate) as the cathode, graphite as the anode, and an electrolyte (typically a solution of a lithium salt, like lithium hexafluorophosphate (LiPF₆) dissolved in an organic solvent). Cells are placed in trays and there are three trays per module. Many modules make up a unit (see **Figure 4.4-1**).

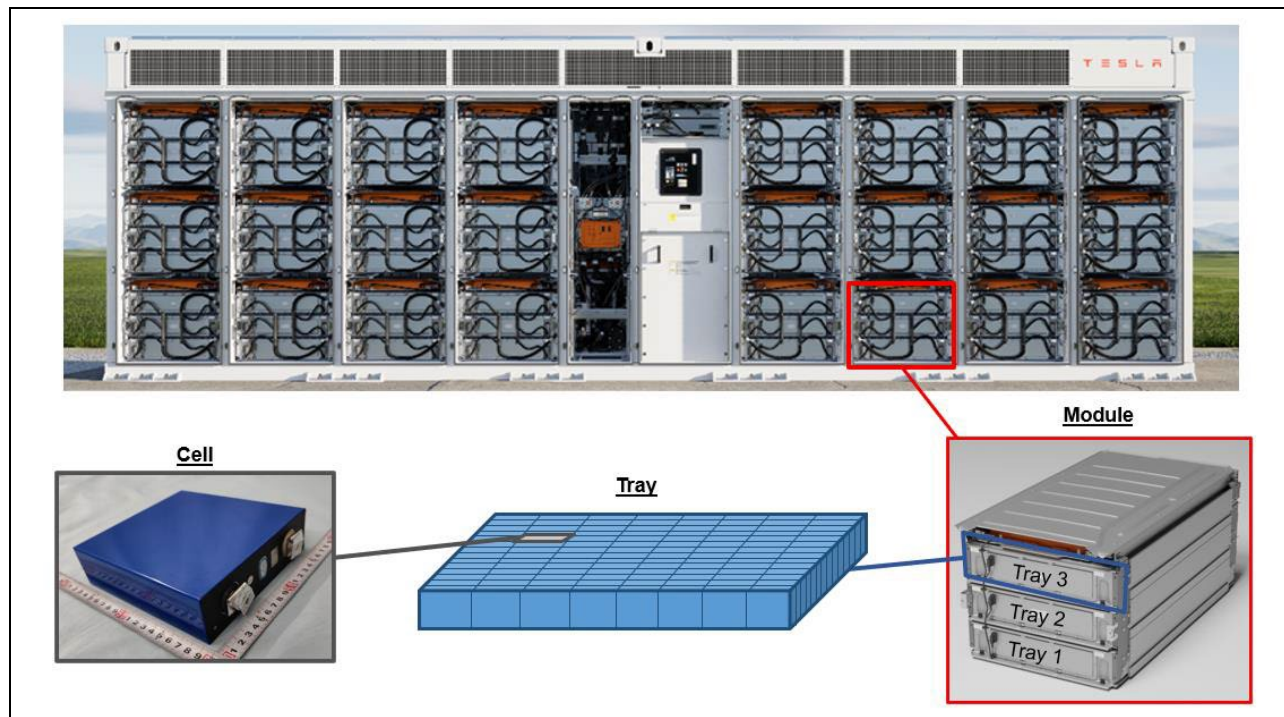


Figure 4.4-1 Tesla MP 2 XL

Source: RCI 2024w, Appendix D

The CEC staff's evaluation of the safety of lithium-ion batteries determined that large lithium-ion BESS installations pose potential hazards. Because they store large amounts of energy, one of the principal hazards associated with lithium-ion BESSs is fire, which could occur if a charged battery cell was somehow damaged, for example by being opened, punctured, or crushed. A fire could also be caused if a battery cell is short-circuited, overheated, or experiences thermal runaway.

Thermal runaway is a process in which the lithium-ion cell enters an uncontrollable, self-heating state and can emit toxic gases such as hydrogen chloride, hydrogen fluoride, hydrogen cyanide, and benzene along with flammable/explosive gases including hydrogen, methane, propane, ethylene, and others. These flammable gases could potentially lead to an explosion within the BESS container. Due to the potential for fire and explosion, staff concludes that the project's BESS would present a significant risk that should be mitigated.

Confirmation of potential hazards posed by BESS installations has been provided through field experience. A notable event that led to a shift in the industry in terms of hazard mitigation at BESS installations occurred on April 19, 2019, at a BESS unit in Surprise, Arizona (a suburb northwest of Phoenix). The facility experienced a thermal runaway event, and the BESS was equipped with a suppression system but was not provided with deflagration venting or explosion prevention systems. The proposed Darden BESS modules for this project would use both deflagration venting and explosion prevention systems. The failure report issued by Arizona Public Services (McMicken Report 2020) indicated that the suspected fire was an *"extensive cascading thermal runaway event initiated by an internal failure within one battery cell of the BESS. The BESS's internal fire suppression discharged a clean agent preventing the fire from spreading to surrounding battery racks. However, the compromised batteries emitted a mixture of combustible gases, which accumulated in the BESS enclosure. The fire department responded and took no immediate action due to a lack of information concerning the system and the event. When a HAZMAT team attempted to enter the BESS area to survey the scale of the event, an explosion occurred, seriously injuring four firefighters."* This event catalyzed further review and evaluation of the risks and hazards to workers, first responders, and the public posed by Li-ion grid-sized batteries. It spurred additional guidelines, recommendations, and additions to fire codes and industry standards including one important industry practice: placing the modules inside a container, which is the case for this project.

More recently, staff inspected the site of the Tesla Megapack fire that occurred on September 20, 2022, at the Elkhorn Battery Energy Storage Facility near Moss Landing, CA, where one out of a total of 256 Megapacks caught fire. The North County Fire Protection District (NCFPD) responded to the incident and proceeded to let the fire burn itself out per Tesla's emergency action plan for first responders. The fire department used onsite fire water monitors (water cannons) to cool adjacent modules to prevent them from overheating. The NCFPD also had access to a Command-and-Control (CNC) center outside of the BESS facility. The CNC gave firefighters access to the BESS telemetry that was relayed to Tesla along with feeds to the thermal infrared cameras that were placed around the site. This information allowed the incident commander to see what BESS enclosure was on fire based on the BESS telemetry and confirmed with the infrared cameras. It also allowed the incident commander to create an action plan to safely battle the fire and to monitor the situation in real time. Staff learned that during project commissioning, the project owner had provided training opportunities to

the NCFPD for practicing how to deal with a fire at the facility. The important takeaway from this incident is that proper training for first responders with the appropriate fire water supply infrastructure and monitoring infrastructure in place were critical for safely limiting the damage and controlling the fire.

On May 15, 2024, there was an incident at the Gateway Energy Storage Facility (GESF) in Otay Mesa, California which is composed of five buildings that house the BESS. There was a thermal runaway event in one battery rack in building three (in the middle of the five-building unit row) which caused a fire at the 240 MW GESF. GESF is a battery-in-a-building project, which staff has found to be rare, with fire barriers, a chemical suppression system, and a pre-action fire protection system. The chemical fire suppression activated but did not put out the fire. The pre-action system then activated allowing the flow of water to help contain the fire. The fire department appears to have made the decision to keep the pre-action sprinkler water flowing to keep the temperature down and to help protect the integrity of the roof to avoid collapsing. Additionally, the firefighters had to cut into the building to allow more water to be sprayed into it to help control the fire. The fire burned itself out by May 22, 2024. Staff visited the site on May 29, 2024, and found that structural integrity of the building was being assessed due to the incident. Staff's conclusion is that the BESS "failed safely." Equipment worked as planned, the fire department knew what it had to do, and there were no injuries to onsite staff, the firefighters, or the public. However, this incident illustrates the challenges of placing grid scale BESS into dedicated buildings when an incident occurs.

Another fire occurred on January 16, 2025, at the 300 MW Moss Landing Battery Energy Storage Facility (MLBESF) owned by Vistra Energy. This facility houses one of the world's largest indoor BESSs. Unlike the GESF though, the building was not purpose-built, but it was placed inside a repurposed turbine hall formerly used by the Moss Landing Power Plant. The blaze prompted the evacuation of approximately 1,200 to 1,700 residents from nearby communities and released plumes of black smoke, raising safety concerns. The cause of the incident is currently under investigation. The MLBESF and the GESF fires demonstrate that the best management practice of siting a BESS facility outdoors in containers and not indoors minimizes the damage caused by thermal runaway fires and reduces the threat of fire propagation.

Like most metal batteries, hydrogen and other flammable gas evolution occurs in lithium-ion batteries due to a parasitic reaction at the anode but the amount varies (even aqueous flow batteries emit small negligible amounts of hydrogen (~ 6 microliters per minute). Some BESS enclosures feature a chimney effect convection cooling design that will automatically dissipate the small amount of hydrogen that could be outgassed. In addition, stacked enclosures can be fitted with a forced-air ventilation system if the natural convection air flow is insufficient for venting purposes. However, given the extreme range of hydrogen flammability, generation of hydrogen remains a safety issue, for any lithium-ion batteries, including the one proposed by the applicant for this project.

In addition to the fire and explosion risks discussed above, there is also the possibility of fire during the transport of the Li-ion containers. The MP2XL would be purchased from Tesla and shipped to the site. There have been several recent transportation accidents on highways involving Li-ion batteries falling off flatbed trucks resulting in fires and highway closures. Staff has reviewed this matter and found that the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a final rule that became effective on January 20, 2023, that required all Li-ion batteries transported by air to have a state of charge (SOC) of 30% or less. This regulation was issued to enhance the safety of transporting li-ion batteries in aircraft. The SOC limit has been shown to halt or minimize the propagation of thermal runaway within a package, decrease heat release values, and the SOC affects the flammability limits in an apparent parabolic matter, where the widest flammability limits are at or near 100% (PHMSA 2018). Therefore, reducing the SOC during transportation reduces the severity of the thermal runaway, slows or eliminates propagation of the thermal runaway, and reduces the volume of flammable gasses vented during thermal runaway.

Unfortunately, there is not an analogous rule for ground transportation. Though some Li-ion batteries could be shipped via ground transport with a SOC of 30%, there is no guarantee that this would occur. Therefore, staff proposes COC **WORKER SAFETY-7** which would require the project owner to ensure that any Li-ion batteries shipped to the project site could not have a SOC above 30 percent.

Methodology

Staff uses a variety of recent industrial guidelines (UL Solutions and NFPA) and the latest edition of CFC to guide its evaluation of BESS projects that seek a license to construct and operate. The industrial guidelines include NFPA 855: Standard for the Installation of Stationary Energy Storage Systems. Others include UL 9540-2020: Energy Storage Systems and Equipment, which lists requirements for BESSs supporting the local-area electric power systems or the electrical utility power grid, and UL 9540A-2019: Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems, which provides the standard test methodology for determining fire and explosion hazards presented by a given BESS design when undergoing an overheating failure, such as thermal runaway. The latest edition of the CFC, particularly chapter 12, also contain fire safety requirements for stationary lithium-ion battery energy storage systems.

Most recently, CPUC has proposed revisions to CPUC GO 167 that would add CPUC oversight over compliance with SB 38 and establish standard maintenance and operational standards for BESS facilities. These revisions would enhance the safety and reliability of BESS facilities by applying industry best practices, lessons learned, and new standards. These are described in the proposed March 13, 2025, CPUC RESOLUTION ESRB-13 (CPUC 2025). Staff believes that this order will enhance the safety and reliability of the proposed BESS facility and has included a requirement in COC

WORKER SAFETY-7 for the project owner to implement the proposed revisions to CPUC GO 167.

The project owner has stated that the BESS would be built to comply with NFPA 855. Staff concurs that NFPA 855 is an excellent standard that would improve the safety of the BESS. The standard has been updated more recently than the latest CFC, helping to clarify several items and requirements for BESS. However, NFPA 855 is not referenced as a standard in Chapter 80 of the California Building Standards Code and is not enforceable. Therefore, staff proposes COC **WORKER SAFETY-8** which would ensure that NFPA 855 is treated as an enforceable code that the project owner would be required to follow for the construction, commissioning, and operation of the BESS.

As mentioned above, staff relies on the UL 9540A standard testing protocol and report to assess the possibility of a thermal runaway reaction for BESS projects. This test method was developed by UL Solutions (formerly Underwriters Labs), a company that researches safety and development of standards addressing the risk from fires and electric shocks (UL Solutions 2023). OSHA and Cal OSHA both require that almost all electrical devices and cables in workplaces meet the relevant UL standards. Test results on these types of batteries have demonstrated that under thermal runaway conditions, emissions of toxic gases such as hydrogen chloride, hydrogen fluoride, and benzene along with flammable/explosive gases including hydrogen, methane, propane, ethylene, and others occurs. Real-world use of these battery systems also show that fires have occurred and thus have the potential to occur (EPRI 2024). Additionally, it can be hard to ascertain the exact cause of these fires because root cause analyses are not always shared with the regulator or fire department as they can be considered proprietary by battery manufacturers. Sharing this valuable information would help to educate stakeholders on what happened and what could be done to improve BESS safety. To help ensure that this information is disclosed if a BESS incident were to occur, staff proposes COC **WORKER SAFETY-7** which would ensure that any root cause analysis is provided to the CEC and FCFPD for review and comment.

The project has proposed the use of the Tesla MP2XL. The MP2XL underwent cell testing in a laboratory where the cell was forced by an external heating method to go into thermal runaway. While in thermal runaway, it was found to emit flammable gases which were captured and analyzed. Having failed the test by going into the heat-induced thermal runaway, the test protocol required a second UL 9540A testing of a module (Rincon 2024). The MP2XL underwent module testing where again flammable gases were emitted and thermal runaway was not contained by the module design which then required UL 9540A unit level testing. The unit level testing was not conducted on the MP2XL because it was conducted on the Tesla Mega Pack 2 (MP2). Tesla, the manufacturer, and the project owner contend that the two systems are similar enough that the test results can be considered similar. The chemistry (Lithium Iron Phosphate or LiFePO₄), the cell composition, and the module compositions are the same between the MP2 and the MP2XL. Additionally, the only difference between the two BESS containers is that the MP2 has 19 racks of batteries while the MP2XL has 24

racks making the MP2XL longer than the MP2 to accommodate the extra 5 racks. Since the UL9540A test can't define an exact source of ignition, staff makes the reasonable assumption that the ignition source could exist in many different locations in a battery unit; in fact, it has already happened in real-life situations. However, since the only difference between the MP2 and the MP2XL is that a few more racks exist in the MP2XL, the test results of the MP2 are sufficient to predict and be a proxy for the hazard risk of the MP 2 XL. Therefore, based on the results of the unit testing of the MP2, the MP2XL also has a risk of thermal runaway.

The Tesla MP 2 XL has several passive fire prevention features that make this battery different from the earlier Tesla battery units that have exploded or caught fire and burned in the past. Internal "sparkers" that detect flammable gases and initiate a "sparker" to burn the very small amounts of flammable gases (including hydrogen) present thus avoiding a build-up of flammable gases. However, even if there were a buildup of flammable gases, the BESS container has explosion release vents (deflagration panels) that would open on the roof of each module to direct an over-pressure or flame upwards instead of to the side, thus avoiding impacts on adjoining modules that could escalate or propagate thermal runaway. The container also has a battery thermal management system that cools the modules.

The project has proposed the use of thermal infrared external detectors at various locations of the BESS facility and up to four 15,000-gallon water tanks for firefighting (TN260642 Updated Project Description December 2024, section 2.2.10). Staff concurs that these measures would help to mitigate the fire risk posed by the BESS. However, staff has determined based on the above discussion that there are other measures that would help to mitigate the fire risk posed by the BESS. In addition to the thermal infrared cameras, there should be a hydrant and water loop system to give firefighters the option to cool the surrounding BESS units from radiant heat in case one of the units undergoes thermal runaway. As the 2022 Elkhorn PG&E incident demonstrated, it is essential to have training provided by the project owner to the first responders to establish roles and responsibilities ahead of time. It is also advantageous to have a Command and Control (CNC) outside of the BESS facility so that an incident commander can safely assess the situation and determine a course of action to combat a fire incident. Additionally, staff has determined that any incident at the BESS facility (including but not limited to fire, malfunction, leak, or thermal runaway of any cell, module, or unit) that would require a root cause analysis be made available to CEC staff and the FCFPD for review and comment. To ensure that these mitigations are adopted, staff proposes COC **WORKER SAFETY-7** that would require administrative and engineering controls to prevent or respond to a fire from the BESS.

Based on the discussion above and with the proposed COCs **WORKER SAFETY-7** and **WORKER SAFETY-8**, staff concludes that the construction and operation of the BESS would be less than significant.

Construction and Operations

The project identified the NFPA Standard 850 as a basis for the fire protection design for the project. NFPA 850 requires the development of a Fire Protection Design Basis Document that identifies relevant hazards such as the presence of fuels, lubricating oils, flammable liquids, and electrical equipment. Staff strongly recommends that the project be built to the NFPA 850 standard. The Delegate Chief Building Official (DCBO) would be instructed to apply NFPA 850 during construction of the project because NFPA 850 is written as a set of “recommended” practices rather than “required” ones. Staff is proposing COC **WORKER SAFETY-9** which would clarify for all stakeholders the responsibilities of the project owner as they relate to NFPA 850. COC **WORKER SAFETY-9** would require compliance of the project with NFPA 850, giving NFPA 850 the effectiveness and clear enforceability of a building code in its application to the project. In any situations where both NFPA 850 and other state or local LORS have application, the more restrictive shall apply.

Fire, Rescue and Emergency Medical Services Response

In the past, staff conducted a statewide survey to determine the frequency of emergency medical services (EMS) response and offsite fire-fighter response for CEC projects in California. The purpose of the analysis was to determine what impact, if any, new CEC projects could have on local emergency services. Staff concludes that incidents at CEC projects that require fire, rescue, or EMS response are in the most part infrequent and represent an insignificant impact on the local fire departments, except for those instances where a rural fire department has a staff of mostly volunteer fire fighters or where the local fire department has less than the standard response times due to the lack of resources such as fire fighters, equipment, and stations for the area covered, as is the case for FCFPD.

Staff reviewed the information provided by the applicant to determine if the available FCFPD fire protection services and equipment would be adequate to protect workers, and to determine the project’s impact on fire protection services in the area. The project would rely on both on-site fire protection systems and local fire protection services. The on-site fire protection systems provide the first line of defense for small fires. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the FCFPD under all conditions. Staff has reviewed and assessed the information available and discussed emergency response capabilities with the FCFPD (Fresno 2025a). Information provided by the FCFD demonstrates that the entire west side of Fresno County lacks the resources to respond to fire, rescue, and medical services emergencies to the existing towns and energy facilities in an appropriate time. Lack of a central area station, crew, water tenders, and engines have been identified by staff as needed by the FCFPD. The bulk of existing and proposed solar PV projects exist in the western part of Fresno County (Fresno 2024a). As a result of staff’s assessment, it was determined that mitigation was necessary. Therefore, staff proposes COC **WORKER SAFETY-12** which

would ensure that the FPFCD has a mechanism to ensure the project's impacts to fire protection services are less than significant.

Staff has also determined that the potential for both work-related and non-work-related heart attacks exists at CEC licensed projects. In fact, staff's research on the frequency of EMS response to CEC projects shows that many of the responses for cardiac emergencies involved non-work-related incidents, including those involving visitors. Staff finds that the quickest medical intervention for cardiac emergencies can only be achieved with the use of an on-site automatic external defibrillator (AED). Therefore, staff concludes that it is appropriate for the project owner to maintain an AED on site in order to treat cardiac emergencies resulting from industrial accidents or other non-work-related causes. Staff proposes COC **WORKER SAFETY-10**, which would require that this portable AED be located on site, all employees on site during operations be trained in its use, and that supervisory workers on site during construction and commissioning also be trained in its use.

PG&E Utility Switchyard and Downstream Network Upgrades

The project would involve construction of the utility switchyard, which would be owned and operated by PG&E as a utility. The project owner has stated that equipment used for construction of the utility switchyard may include, but is not limited to: cranes, aerial lift, skid steer loaders, rubber tired loaders, rubber tired dozer, welders, trencher, forklift, bore/drill rig, grader, roller, tractor/loader/backhoe, haul trucks, and utility terrain vehicles (UTVs). Approximately 3-acre-feet of water would be used during construction of the utility switchyard, at an average of 50 to 100 gallons per day (this number is included in the overall 1,100 acre-feet of construction water needed for the project as a whole). Special safety hazards would be present during the use of all the above-mentioned equipment and operations involving cranes would require the employ of certified and Cal OSHA-licensed crane operators with a pre-written Lift Plan.

All the proposed transmission system upgrades associated with the Darden Clean Energy Project would be done by PG&E. Major utilities such as PG&E have extensive experience with the types of workplace activities involved with the proposed upgrades. They also are experienced with regulations applicable to worker protection and have extensive worker safety plans and procedures to protect their employees from workplace hazards. Staff concludes that PG&E would, for the most part, conduct the upgrade activities in compliance with all applicable LORS that address occupational safety and health regulations. Staff also concludes that the proposed upgrades would, for the most part, not require significant levels of service from the local fire department and would not result in significant impacts on local fire protection services in the project area. Standard PG&E occupational safety and health programs and fire protection measures would be followed. However, the PG&E Standard Construction Practices provided to staff focused on ensuring minimal impacts to biological species on the site and listed only a few standard practices ensuring worker safety and health. These standard practices are also not dated so staff has no way of knowing if PG&E's practices

have been updated to include recent Cal OSHA worker safety requirements. In order to ensure that worker safety and health LORS are followed on these non-jurisdictional project elements, and to enhance worker safety, staff is proposing **MM WORKER SAFETY-1** and **WORKER SAFETY-2**.

Cumulative Impacts

Staff discussed the 17 energy-related projects listed above and the potential for a cumulative and direct impact with the FCFPD. Staff has concluded based upon staff's experience and analysis of the issues that both a direct impact and a cumulative impact will be posed by the operation of the Darden project and therefore proposes that the FCFPD and the project owner enter into negotiations to provide mitigation as required in proposed COC **WORKER SAFETY-12**. As an alternative if no agreement can be reached, staff is recommending that payments be determined by a methodology developed by the FCFPD. The methodology allows the FCFPD to derive a cost allocation to the project, both a one-time initial payment and an adjustable annual payment, all based on several factors including project size, megawatts generated, additional energy projects built, and hazards posed. Staff has thoroughly reviewed and discussed this methodology with the FCFPD and finds it to be appropriate, useful, and based on sound principles.

Staff bases this determination regarding mitigation on the following facts:

- The solar array will be by far the largest solar PV facility in Fresno County (Fresno 2024).
- Several vegetation fires have occurred in the area where operating solar PV facilities in Fresno County are located, two in the past several months, that has required the response of the FCFPD.
- The FCFPD stations on western side of Fresno County (west of CA-99) are understaffed and under-equipped to handle fire, rescue, or emergency medical response at the project site and the other energy facilities proposed for development within an appropriate time period.
- The FCFPD stations on the western side of Fresno County are presently understaffed and under-equipped to handle emergency responses to the growing population of towns on the west side of the county including Mendota, Tranquility, San Joaquin, Coalinga, and others with current resources even with automatic mutual aid thus making it even more difficult to provide for these populations if personnel and equipment are responding to the Darden project or the other energy projects described above.

4.4.3 Applicable LORS and Project Conformance

Table 4.4-1 contains staff's determination of conformance with applicable local, state and federal LORS, including any proposed conditions of certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As

shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed project would be consistent with all applicable LORS. The subsection at the end of this section, "Staff Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 4.4-1 COMPLIANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
Federal	
Title 29 U.S. Code (USC) section 651 et seq (Occupational Safety and Health Act of 1970)	Yes. Worker Safety-1 and Worker Safety-2 require that the project owner develop and implement occupational safety and health programs to prevent worker injuries during construction, commissioning, and operations. Worker Safety-3 and Worker Safety-4 requires the project owner to implement an additional layer of worker safety during construction.
Title 29 CFR sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	Yes. Worker Safety-1 and Worker Safety-2 require that the project owner develop and implement occupational safety and health programs to prevent worker injuries during construction, commissioning, and operations. Worker Safety-3 and Worker Safety-4 requires the project owner to implement an additional layer of worker safety during construction. Worker Safety-5 and Worker Safety-6 requires the project owner to implement an additional layer of worker safety during construction, commissioning, and operations.
FAA Regulations 14 CFR Part 91 (General Operating and Flight Rules) and Part 133 (Rotorcraft External-Load Operations)	Yes. Worker Safety-1 & Worker Safety-2 requires the preparation and implementation of a helicopter Code of Safe Practices before a helicopter can be used to transport construction or maintenance materials during construction, commissioning, and operations.
State	
CCR, Title 8, all applicable sections (Cal OSHA regulations) including CCR: Subchapter 4: Construction Safety Orders, and specifically tit. 8, §§ 1900 – 1909 Helicopter Operations; tit. 8, §§ 1920 – 1928 Fire Detection and Prevention; Subchapter 5: Low and High Voltage Electrical Safety Orders; and specifically tit. 8, §§ Subchapter 7: General Industry Safety Orders; and specifically tit. 8, §§: 3203 – Injury and Illness Prevention Program; 3314 Control of Hazardous Energy Lockout/Tagout; 3395 & 3396 Heat Illness Prevention Programs; 5141.1 Protection from Wildfire Smoke	Yes. Staff's assessment below recognizes and lists many of the most important Cal OSHA worker safety and health programs, and Worker Safety-1, Worker Safety-2, Worker Safety-3, Worker Safety-4, Worker Safety-5, Worker Safety-6, Worker Safety-8, Worker Safety-9, and Worker Safety-10 impose specific conditions to ensure compliance with Title 8, as well as Health & Safety Codes for Fire Protection as shown in Worker Safety-1, Worker Safety-2, Worker Safety-7, Worker Safety-8, and Worker Safety-9.

TABLE 4.4-1 COMPLIANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
5184 Storage Battery Systems; 5185 6150-6154 Fire Protection	
<p>California Code, Health and Safety Code - HSC § 13146.2</p> <p>(a) Every city, county, or city and county fire department or district providing fire protection services required by Sections 13145 and 13146 to enforce building standards adopted by the State Fire Marshal and other regulations of the State Fire Marshal shall, annually, inspect all structures subject to subdivision (b) of Section 17921, except dwellings, for compliance with building standards and other regulations of the State Fire Marshal.</p> <p>California Fire Code Chapter 12</p> <p>Chapter 12 governs the placement and fire prevention of battery energy storage systems. California Public Utilities Code 761.3 section (g) "SB 38" added safety requirements of battery storage projects. It requires every battery energy storage facility in California to have an emergency response and emergency action plan that cover the premises of the facility, consistent with emergency action plans in CCR, Title 8. The owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the county and, if applicable, the city where the facility is located.</p> <p>CPUC GO 167-C establishes standards for electric generating facilities to ensure that they are effectively maintained and operated to ensure safe and reliable service.</p>	<p>Yes. Staff's assessment recognizes the need for additional fire protection for the solar field and BESS and worker EMS response as shown in Worker Safety-8, Worker Safety-9, Worker Safety-10, and Worker Safety-12.</p>
California Labor Code section 6709: Worker Training on VF	Yes. Worker Safety-11 requires training on VF.
Local	
International Fire Code as adopted into the 2022 California Fire Code and Fresno County Ordinance including the July 2024 amendment	Yes. See discussion on the fire authority.
General	
National Fire Protection Association (NFPA) 850 and 855	Yes. Worker Safety-8 and Worker Safety-9 requires adherence to NFPA 855 and 850 industry standards.

4.4.4 Conclusions and Recommendations

CEC staff concludes that if the project owner provides a Project Construction Safety and Health Program and a Project Operations and Maintenance Safety and Health Program

as required by COC **WORKER SAFETY-1** and **WORKER SAFETY-2** and fulfills the requirements of COC **WORKER SAFETY-3** through **WORKER SAFETY-12**, the project would incorporate adequate levels of industrial safety and comply with applicable LORS.

Staff also concludes that the operation of the project would present a significant direct and cumulative impact on the local fire department and has recommended mitigation in COC **WORKER SAFETY-12** which if implemented would reduce the impact to less than significant.

Impacts associated with non-jurisdictional project components require mitigation to reduce impacts to less than significant. Staff recommends the mitigation measures detailed in subsection "4.4.6 Recommended Mitigation Measures" below. The mitigation measures recommended below could and should be implemented by the permitting authority (CPUC) as mitigation measures.

4.4.5 Proposed Conditions of Certification

The following proposed conditions of certification include measures to ensure conformance with applicable LORS. Staff makes these recommendations to supplement, expand, and clarify the applicant's proposed mitigation measures.

WORKER SAFETY-1 The project owner shall submit to the CPM a copy of the Project Construction Health and Safety Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program;
- a Construction Emergency Action Plan that fulfills the requirements of California Public Utilities Code 761.3 section (g);
- a Helicopter Code of Safe Practices that incorporates all provisions of tit. 8 §§ 1901-1909 and specially includes an added limitation of operations to be conducted only during day light hours, a landing zone dust control plan, a traffic control plan for areas where the loads would be deposited and near any public road or highway, includes requirements for a Designated Biologist(s) to monitor and avoid avian impacts, and complies with FAA Regulations 14 CFR Part 91 (General Operating and Flight Rules) and Part 133 (Rotorcraft External-Load Operations);
- an Emergency Response Plan; and
- a Construction Fire Prevention Plan that includes methods of access for emergency responders through locked gates.

The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program, and the Helicopter Code of Safe Practices shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan, Construction Emergency Response Plan, and the Fire Prevention Plan shall be submitted to the FCFPD for review and comment prior to submittal to the CPM for approval.

Verification: At least 90 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction and Safety and Health Program. The project owner shall provide to the CPM a copy of letters from the FCFPD detailing resolved comments on the Construction Fire Prevention Plan, the Emergency Action Plan, and Emergency Response Plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following items:

1. An Operation Injury and Illness Prevention Plan.
2. An Operations Weed Management Plan that is consistent with **COC BIO-7** which requires: 1) an avoidance of the use of toxic substances; 2) the use of soil bonding and weighting agents which are non-toxic to wildlife and plants; 3) a prohibition on the use of anticoagulants for rodent control; 4) a prohibition on the use of pre-emergent and other herbicides with documented residual toxicity; and 5) a directive that herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife-safe use of herbicides.
3. An Operations Emergency Action Plan that that fulfills the requirements of California Public Utilities Code 761.3 section (g).
4. An Operations Emergency Response Plan.
5. An Operations Helicopter Code of Safe Practices if helicopters are used for maintenance or repairs, that incorporates all provisions of tit. 8 §s 1901-1909 and specially includes an added limitation of operations to be conducted only during day light hours, a landing zone dust control plan, a traffic control plan for areas where the loads would be deposited and near any public road or highway, includes requirements for a Designated Biologist(s) to monitor and avoid avian impacts, and complies with FAA Regulations 14 CFR Part 91 (General Operating and Flight Rules) and Part 133 (Rotorcraft External-Load Operations).
6. A Hazardous Materials Management Program.
7. A Fire Prevention Plan (CCR, tit. 8, § 3221) that includes methods of access for emergency responders through locked gates.

8. A Fire Protection System Impairment Program.
9. A Personal Protective Equipment Program (CCR, tit.8, §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Hazardous Materials Management Program, Emergency Action Plan, Emergency Response Plan, Fire Prevention Plan, Fire Protection System Impairment Program, Helicopter Code of Safe Practices, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan, Fire Protection System Impairment Program, and the Emergency Action Plan shall also be submitted to the FCFPD for review and comment.

Verification: At least 30 days prior to the start of commissioning, the project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy to the CPM of letters from the FCFPD detailing the resolved comments on the Operations Fire Prevention Plan, Fire Protection System Impairment Program, and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of solar PV and BESS construction and relevant worker safety-related LORS. The CSS shall be capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to ensure compliance and mitigate hazards. The CSS shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- ensure that the safety program for the project complies with Cal OSHA and federal regulations related to solar PV and industrial battery energy storage system projects;
- ensure that all construction and commissioning workers and supervisors receive adequate safety training;
- conduct accident and safety-related incident investigations and provide emergency response reports for injuries, and inform the CPM of safety-related incidents; and
- ensure that all the plans identified in COC **WORKER SAFETY-1** and **WORKER SAFETY-2** are implemented.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the CSS. The contact information of any replacement CSS shall be submitted to the CPM within one business day. The CSS shall submit in the Monthly Compliance Report (MCR) a monthly safety inspection report to include:

- a record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- summary report of safety management actions and safety-related incidents that occurred during the month;
- report of any continuing or unresolved situations and incidents that may pose danger to life or health;
- report of any visits from Cal OSHA and/or any complaints from workers to Cal OSHA; and
- report of accidents, injuries, and near misses that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the DCBO for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. Those services shall be in addition to other work performed by the DCBO. The Safety Monitor shall be selected from an independent company not affiliated with the DCBO and report directly to the DCBO and would be responsible for verifying that the CSS, as required in COC **WORKER SAFETY-3**, implements all appropriate Cal OSHA and CEC safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall prepare and submit a Sampling and Analysis Plan (SAP) to conduct laboratory testing of the groundwater from the two wells to be used for dust control, have a state certified laboratory conduct the analyses, and submit both the SAP and lab results to the CPM for review and approval prior to the use or ground application of water from those wells.

Verification: At least 60 days prior to the start of construction, the project owner shall submit the SAP to the CPM for review and approval. At least 30 days prior to the planned use of the well water, the project owner shall submit the laboratory findings to the CPM for review and approval of the use of the well water.

WORKER SAFETY-6 The project owner shall provide a procedure or augment existing procedure(s) for both solar facility construction and operations that details the following:

- a. Workers are trained to move away from a fire, even in an incipient stage, and call the control room to call 911 immediately.

- b. Workers use a standard form checklist when working on electrical components of an inverter, collector box, or wiring from a solar panel so as to ensure that all components are locked out and tagged out until the job task is completed.

Verification: At least 60 days prior to the start of construction, the project owner shall provide the procedure(s) with the standard checklist to the CPM for review and approval.

WORKER SAFETY-7 The project owner shall do the following at the BESS facility:

- a. Require that the lithium-ion batteries be shipped from the factory to the project site at a maximum of 30 percent State of Charge (SOC);
- b. Provide that fire lanes exist down the length and width of the BESS units wide enough to allow for fire engine access;
- c. Provide at least two gates into the BESS facility wide enough for emergency access;
- d. Install remote fire or heat sensors at sufficient locations to cover the entire BESS facility (e.g., thermal infrared);
- e. Place fire hydrants at the corners and midline location along the two east to west lengths of the facility;
- f. Provide fire water flow of at least 2,500 gallons per minute;
- g. Install closed-circuit television (CCTV) cameras with Pan, Tilt, Zoom (PTZ), and low-light capability that cover the entire area of the BESS and which would have their own separate power supply;
- h. Establish a Command and Control Protocol for staff to perform emergency duties and responsibilities during the detection, initiation, and escalation of a BESS fire;
- i. Establish remote telemetry and CCTV viewing in a Command and Control Center located at a safe distance from the BESS facility for an Incident Commander to use;
- j. Establish an annual joint training program with the FCFPD that includes table-top exercises for a BESS fire;
- k. Prepare and submit a Root Cause analysis of any incident at the BESS facility (including but not limited to fire, malfunction, leak, or thermal runaway of any cell, module, or unit) to the CPM;
- l. Consult with the FCFPD in preparing the fire protection system specifications and drawings for the Operations and Maintenance Building to ensure an

- adequate water supply for the fire suppression systems for the BESS facility as well as for occupied buildings; and
- m. Implement the final provisions of CPUC GO 167-C.

Verification: At least 60 days prior to the start of construction, the project owner shall provide all the information required above (with the exception of k) to the FCFPD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

Within 10 days of an incident at the BESS facility (including but not limited to fire, malfunction, leak, or thermal runaway of any cell, module, or unit) the project owner shall notify the CPM that a Root Cause Analysis (RCA) is being prepared. The project owner shall work with the CPM to determine a submission date for the completed RCA. The RCA shall be submitted to the FCFPD for review and comment, and to the CPM for review and approval.

WORKER SAFETY-8 The project owner shall adhere to all applicable provisions of the latest version of NFPA 855: Standard for the Installation of Stationary Energy Storage Systems, as the minimum level of safety for the BESS. The project owner shall interpret and adhere to all applicable NFPA 855 recommended provisions and actions stating "should" as "shall." In any situations where both NFPA 855 and the state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 855. At least 90 days prior to the start of construction of the BESS, the project owner shall provide all system specifications and design drawings to the FCFPD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

WORKER SAFETY-9 The project owner shall adhere to all applicable provisions of the latest version of NFPA 850: Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, as the minimum level of fire protection. The project owner shall interpret and adhere to all applicable NFPA 850 recommended provisions and actions stating "should" as "shall." In any situations where both NFPA 850 and the state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 850. At least 90 days prior to the start of construction of the fire protection system, the project owner shall provide all fire protection system specifications and drawings to the FCFPD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

WORKER SAFETY-10 The project owner shall ensure that a portable AED is located on site during construction, commissioning, and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functional. During construction and commissioning the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the CSS or delegate, and all shift foremen. During operations, all project employees on site shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable AED is available to be made available on site as soon as physically possible along with a copy of the training and maintenance program for review and approval.

WORKER SAFETY-11 The project owner shall develop and implement a worker VF Prevention and Response Plan that includes an enhanced Dust Control Plan containing the requirements described in **AQ-SC3** and additionally requires:

- a. Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present.
- b. Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with **AQ-SC4**) immediately whenever visible dust comes from or onto the site. Should enhanced dust control methods fail to control dust, the project owner or designate shall direct a temporary shutdown of the activity causing the emissions. The activity shall not restart until the project owner or designate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source.
- c. Specific training on VF as per Labor Code Section 6109 which requires that employers of workers in high-incidence counties (Fresno County is included) shall provide effective awareness training on VF to all employees before work begins and annually by that date thereafter.
- d. Medical referral protocol.
- e. Reporting of medically diagnosed cases to the California Department of Public Health, Cal OSHA, and the CPM.

Verification: At least 60 days prior to the commencement of site mobilization, the VF Prevention and Response Plan shall be provided to the CPM for review and approval.

WORKER SAFETY-12 The project owner shall either:

- a. reach an agreement with the FCFPD regarding funding to provide mitigation for direct and cumulative project-related impacts, or
- b. if no agreement can be reached shall fund its share of the capital costs in a one-time payment and shall provide an annual payment for the support of the fire department staff, both in amounts as determined by the application of FCFPD's cost allocation methodology, as described in the cumulative impacts section, (plus yearly negotiated increases for support of fire department staff), commencing with the date of site mobilization and continuing annually thereafter on the anniversary until the final date of project decommissioning.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall provide to the CPM for review and approval either:

- a. A copy of the agreement with the FCFPD or
- b. Documentation that a letter of credit has been provided to the FCFPD and that a letter of credit will be provided each year (plus yearly negotiated increases), in the amounts as determined by the FCFPD methodology, at the start of commercial operations.

4.4.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures (**MM**) can and should be adopted by the agency with permitting authority over those components consistent with CCR, title 14, section 15091(a)(2). The measures address occupational safety and health and fire protection.

MM Worker Safety-1 The person with authority shall submit to the CPUC a copy of the Project Construction Health and Safety Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program;
- a Construction Emergency Action Plan that fulfills the requirements of California Public Utilities Code 761.3 section (g);
- a Helicopter Code of Safe Practices that incorporates all provisions of tit. 8, §§ 1901-1909 and specially includes an added limitation of operations to be conducted only during day light hours, a landing zone dust control plan, a traffic control plan for areas where the loads would be deposited and near any public road or highway, includes requirements for a Designated Biologist(s) to monitor and avoid avian impacts, and complies with FAA Regulations 14 CFR Part 91 (General Operating and Flight Rules) and Part 133 (Rotorcraft External-Load Operations);

- an Emergency Response Plan; and
- a Construction Fire Prevention Plan that includes methods of access for emergency responders through locked gates.

The Construction Health and Safety Program shall be submitted to the FCFPD for review and comment prior to submittal to the permitting authority for approval.

MM Worker Safety-2 The person with authority shall develop and implement a worker VF Prevention and Response Plan that includes an enhanced Dust Control Plan containing the following requirements:

1. The main access roads through the facility will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.
2. All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than CARB approved soil stabilizers, and that shall not increase any other environmental impacts, including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of COC **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.
3. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
4. Visible speed limit signs shall be posted at the construction site entrances.
5. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
6. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
7. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

8. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the permitting authority.
9. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.
10. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
11. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads enroute from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.
12. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or shall be treated with appropriate dust suppressant compounds.
13. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.
14. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.
15. Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present.
16. Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. immediately whenever visible dust comes from or onto the site. Should enhanced dust control methods fail to control dust, the on-site person with authority or designate shall direct a temporary shutdown of the activity causing the emissions. The activity shall not restart until the on-site person with authority or designate is satisfied that appropriate additional mitigation or other site conditions have

- changed so that visual dust plumes will not result upon restarting the shutdown source.
17. Specific training on VF as per Labor Code Section 6109 which requires that employers of workers in high-incidence counties (Fresno County is included) shall provide effective awareness training on VF to all employees before work begins and annually by that date thereafter.
 18. Medical referral protocol.
 19. Reporting of medically diagnosed cases to the California Department of Public Health, Cal OSHA, and the permitting authority.

4.4.7 References

- CAL FIRE al2024 – CALFIRE. Incident – Dorado Fire. Last updated on September 6, 2024. Available online at: <https://www.fire.ca.gov/incidents/2024/9/5/dorado-fire/updates/4e0be271-ea6d-4082-ab3f-e95ae1f178c6>
- CAL FIRE 2024b – CALFIRE. Incident – Palmer Fire 2024. Last updated September 5, 2024. Available online at: <https://www.fire.ca.gov/incidents/2024/9/5/palmer-fire/updates/4aac8610-ab4f-46c2-94eb-1c82041c00ed>
- CAL OSHA 2024 – California Occupational Safety and Administration. 2024. "Protection from Valley Fever." Available online at: <https://www.dir.ca.gov/dosh/valley-fever-home.html>
- CDPH 2024 – California Department of Public Health 2024. "Valley Fever Is on the Rise in California" Accessed in December 2024. Available online at: <https://www.cdph.ca.gov/Programs/CID/DCDC/pages/Coccidioidomycosis.aspx>
- CLC 2019 – Section 6709 of the California Labor Code (AB-203 of 2019). Effective January 1, 2019. Available online at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=LAB§ionNum=6709
- CPUC 2025 – California Public Utilities Commission DRAFT RESOLUTION ESRB-13 – Adopts General Order (GO) 167-C, Enforcement of Maintenance and Operation Standards for Electric Generating Facilities and Energy Storage Systems. Dated January 27, 2025. Available online at: <https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-issues-proposal-to-enhance-safety-of-battery-energy-storage-facilities>
- EPRI 2024 – Electric Power Research Institute (EPRI). "Insights from EPRI's Battery Energy Storage Systems (BESS) Failure Incident Database: Analysis of Failure Root Cause." White Paper. Dated May 10, 2024. Available online at: https://www.epri.com/research/products/000000003002030360?8729b241_page=7
- Fresno 2024a – Fresno County Public Works and Planning Division. Photovoltaic Facilities Processing. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities>

- Fresno 2024b – Fresno County Public Works and Planning Division. Photovoltaic Solar & Energy Storage Projects Submitted to Fresno County. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/5/public-works-and-planning/development-services/planning-and-land-use/photovoltaic-solar-facilities/pv-solar-projects-in-process-24-06-12.pdf>
- Fresno 2025a – Fresno County Fire Protection District (TN 261486). Fresno County Fire Protection District Comments on Darden Clean Energy Project. Dated January 31, 2025. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024n – Intersect Power (TN 260642). Updated Project Description. December 2024. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- McMicken 2020 – “Battery Energy Storage System Event, Technical Analysis and Recommendations, Arizona Public Service.” Prepared by DNV GL. Dated July 18, 2020. Available online at: <https://www.aps.com/en/About/Our-Company/Newsroom/Articles/Equipment-failure-at-McMicken-Battery-Facility>
- PHMSA 2018 – Pipeline and Hazardous Materials Safety Administration, United States Department of Transportation. Lithium Battery Packaging Evaluation – FAA Reauthorization Act of 2018. Available online at: <https://www.phmsa.dot.gov/standards-rulemaking/hazmat/lithium-battery-packaging-evaluation-faa-reauthorization-act-2018>
- RCI 2023hh – Rincon Consultants, Inc. (TN 253021). Appendix V Swainson’s Hawk Conservation Strategy. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024w – Rincon Consultants, Inc. (TN 258490). CEC Data Request Response Set 5. Dated August 14, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- UL Solutions 2023 – UL Solutions. Fire Risk Assessment. Accessed in August 2023. Available online at: <https://www.ul.com/services/portfolios/fire-safety>

Section 5

Environmental Impact Assessment

Under the California Environmental Quality Act (CEQA), the environmental setting of a project is generally the physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced (CEQA Guidelines, § 15125(a)(1)). The environmental setting described in an EIR by the lead agency will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant (CEQA Guidelines, § 15125(a)).

5.1 Air Quality

The Darden Clean Energy Project (DCEP or project) would be in an unincorporated area of western Fresno County in the San Joaquin Valley Air Basin (SJVAB or Air Basin). The project site is in an agricultural area of unincorporated Fresno County, south of the community of Cantua Creek. The solar facility, Battery Energy Storage System (BESS), and an associated substation would be located on approximately 9,100 acres of land currently owned by Westlands Water District, between South Sonoma Avenue to the west and South Butte Avenue to the east. The project site is southeast of the existing Panoche Power Plant.

In addition to the facility and linears, the project also consists of offsite components that fall outside the California Energy Commission's (CEC) jurisdiction but are part of the overall project. These components include the (1) construction of Pacific Gas and Electric Company's (PG&E) utility switchyard, (2) the construction of a loop in and out line between the PG&E switchyard and the existing Los Banos-Midway 500kV line, and (3) the construction of a fiber optic communication line from the PG&E switchyard north to an existing splice point to the Panoche substation or south to the existing Gates substation. In addition to these actions, the California Independent System Operator (California ISO) identified downstream network upgrades to three existing substations, Los Banos, Midway and Gates or Manning as well as the addition of two transposition structures. These offsite components, also known as non-jurisdictional components of the project, are considered as part of this analysis.

The Air Quality section describes the environmental setting and regulatory background and discusses impacts specific to ambient air quality associated with the construction, and operation and maintenance of the proposed project.

The air quality analysis focuses on criteria air pollutants, for which there are established ambient air quality standards for public health protection. Toxic air contaminants are addressed separately in **Section 5.10, Public Health**.

5.1.1 Environmental Setting

Existing Conditions

Criteria Air Pollutants

The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) for several pollutants based on their adverse health effects. The U.S. EPA has set national ambient air quality standards (NAAQS) for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), particulate matter of 10 micrometers or less in diameter (PM₁₀), particulate matter of 2.5 micrometers and smaller in diameter (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). Primary standards were set to protect public health; secondary standards were set to protect public welfare against visibility impairment, damage to animals, crops,

vegetation, and buildings. Sources of nitrogen oxides (NO_x) and volatile organic compounds (VOC) or reactive organic gases (ROG) are also regulated as these pollutants are precursors to ozone formation through photochemical reactions in the ambient air. In addition, CARB has established California ambient air quality standards (CAAQS) for these pollutants, as well as for sulfates (SO₄), visibility reducing particles, hydrogen sulfide (H₂S), and vinyl chloride. CAAQS are generally stricter than NAAQS.

The ambient air quality standards currently in effect in California and nationally are shown in **Table 5.1-1**.

TABLE 5.1-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS				
Pollutant	Averaging Time	California Standards ^a	National Standards ^b (Primary)	National Standards ^b (Secondary)
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	—	Same as Primary Standard
	8 hours	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	
PM ₁₀	24 hours	50 µg/m ³	150 µg/m ³	Same as Primary Standard
	Annual Mean	20 µg/m ³	—	
PM _{2.5}	24 hours	—	35 µg/m ³	Same as Primary Standard
	Annual Mean	12 µg/m ³	9.0 µg/m ³ ^c	15 µg/m ³
CO	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	—
	8 hours	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	—
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³) ^c	—
	Annual Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary Standard
Sulfur Dioxide (SO ₂) ^e	1 hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m ³)
	24 hours	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas) ^e	
	Annual Mean		0.030 ppm (for certain areas) ^e	

Notes: ppm=parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; "—" = no standard.

a California standards for O₃, CO (except 8-hour Lake Tahoe), SO₂ (1 and 24 hour), NO₂, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded.

b National standards (other than O₃, PM, NO₂ [see note d below], and those based on annual arithmetic mean) are not to be exceeded more than once a year. The 8-hour O₃ standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. The 24-hour PM₁₀ standard of 150 µg/m³ is not to be exceeded more than once per year on average over a 3-year period. The 24-hour PM_{2.5} standard is attained when the 3-year average of 98th percentile concentration is less than or equal to 35 µg/m³.

c On March 6, 2024, the U.S. EPA published a final rule to strengthen the annual PM_{2.5} NAAQS from 12.0 µg/m³ to 9.0 µg/m³ (U.S. EPA 2024c). See detailed discussion in the text.

d To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.

e On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The previous SO₂ standards (24-hour and annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is a U.S. EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Sources: CARB 2024b, U.S. EPA 2024a, U.S. EPA 2024c

On March 6, 2024, the U.S. EPA published a final rule to lower the primary annual PM_{2.5} NAAQS from 12.0 µg/m³ to 9.0 µg/m³ (U.S. EPA 2024c). The final revisions to the primary annual PM_{2.5} NAAQS trigger a process under which States (and Tribes, if they choose) make recommendations to the Administrator regarding designations, identifying areas of the country that either meet or do not meet the new or revised PM NAAQS. Those areas that do not meet the revised PM NAAQS will need to develop plans that demonstrate how they will meet the standards. Until the U.S. EPA designates an area with respect to the proposed revised PM_{2.5} NAAQS, the New Source Review (NSR) provisions applicable under an area's designation for the 1997, 2006, and 2012 PM_{2.5} NAAQS would continue to apply (U.S. EPA 2024c). States and Tribal Authorities will submit initial recommendations of areas that do not attain this standard (i.e., nonattainment areas) to U.S. EPA by February 2025, and U.S. EPA is expected to finalize area designations by February 2026. In addition, according to the U.S. EPA implementation guide for the revised annual PM_{2.5} NAAQS, as of May 6, 2024, all applicants for permits to construct a new major source or major modification of an existing stationary source need to conduct an air quality analysis that considers the revised PM_{2.5} NAAQS. Because this project's permit application was deemed complete on September 19, 2024, which is after the effective date of the final rule, staff's air quality analysis considers the revised PM_{2.5} NAAQS.

The air quality standards, shown in **Table 5.1-1**, are designed and established to be health protective. Air pollution can cause known health problems, especially for children, the elderly, and people with heart or lung problems. Healthy adults may experience symptoms during periods of intense exercise. Pollutants can also cause damage to vegetation, animals, and property. This analysis relies on the ambient air quality standards as health-based thresholds to help define what is considered a substantial pollutant concentration for the criteria air pollutants.

Attainment Status

The project site is in the unincorporated area of western Fresno County in the San Joaquin Valley Air Basin (SJVAB or Air Basin), which is comprised of eight counties: San

Joaquin, Stanislaus, Fresno, Merced, Madera, Kings, Tulare, and western Kern (CARB 2022 and U.S. EPA 2024b).

The SJVAB currently is classified as nonattainment for the one-hour state ozone standard as well as for the federal and state eight-hour ozone standards. The SJVAB is also designated as nonattainment for the federal and state annual arithmetic mean and federal 24-hour PM_{2.5} standards. Additionally, the SJVAB is classified as nonattainment for the state 24-hour and annual arithmetic mean PM₁₀ standards. The SJVAB is unclassified or classified as attainment for all other pollutant standards (RCI 2023dd).

Existing Ambient Air Quality

The San Joaquin Valley Air Pollution Control District (SJVAPCD or District) operates 10 air quality monitoring stations in the SJVAB within Fresno County. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether ambient air quality meets California and federal standards. The nearest monitoring station is the Tranquility-32650 West Adams Avenue monitoring station, located at 32650 West Adams Avenue in Fresno, approximately 13 miles north of the project site. This monitoring station measures ozone and PM_{2.5}. For PM₁₀ and NO₂, additional data from the Fresno-Drummond Street monitoring station was used, which is located at 4706 East Drummond Street in Fresno, approximately 38 miles northeast of the project site. In addition, data from the Fresno-Garland monitoring station, approximately 30-miles northeast of the project site, is provided (RCI 2023II). For CO and SO₂, the data was observed at the monitoring station 3727 N First St, Fresno, approximately 29 miles from the northeast of the project boundary.

Table 5.1-2 presents the air quality monitoring data from 2018 to 2022, the most recent years for which data are available. Data in this table that are marked in **bold** indicate that the most-stringent current standard was exceeded during that period.

The data are from the closest and most representative ambient air monitoring stations:

- O₃ and PM_{2.5} from the Tranquility-32650 West Adams Avenue monitoring station (about 13 miles north of the project boundary), and
- NO₂ and PM_{2.5} from the Fresno-Drummond Street monitoring station (about 38 miles northeast of the project boundary), and
- CO and SO₂ from 3727 N First St, Fresno (about 29 miles northeast of the project boundary).

TABLE 5.1-2 AMBIENT AIR QUALITY MONITORING DATA						
Pollutant	Averaging Time	2018	2019	2020	2021	2022
O ₃ (ppm)	1-hour	0.088	0.079	0.087	0.088	0.074
	8-hour	0.083	0.071	0.087	0.080	0.066
PM ₁₀ (µg/m ³)	24-hour	152.2	175.6	350.4	151.8	73.4
	Annual	45.8	38.6	59.9	43.8	31.2

TABLE 5.1-2 AMBIENT AIR QUALITY MONITORING DATA

Pollutant	Averaging Time	2018	2019	2020	2021	2022
PM2.5 (µg/m ³)	24-hour (98th percentile)	51.4	17.1	92.5	32.0	22.0
	Annual	11.1	5.8	11.4	8.9	6.7
NO ₂ (µg/m ³)	1-hour (maximum)	142.7	79.5	125.6	121.3	109.6
	1-hour (98th percentile)	117.5	73.1	102.1	93.4	97.8
	Annual	24.4	--	--	20.7	22.6
CO (µg/m ³)	1-hour	2,512.1	2,276.3	5,757.1	2,233.9	2,422.8
	8-hour	2,290.0	1,717.5	2,862.5	1,946.5	2,061.0
SO ₂ (µg/m ³)	1-hour (maximum)	18.9	23.3	42.4	19.7	8.9
	1-hour (98th percentile)	13.6	10.2	10.2	14.1	7.3

Sources: U.S. EPA 2024d and CARB 2024a

The maximum concentration values listed in **Table 5.1-2** have not been screened to remove values that may be designated by U.S. EPA as exceptional events. Violations that are the result of exceptional events, such as wildfires, are normally excluded from consideration as AAQS violations. Exceptional events undoubtedly affected many of the maximum concentration values in recent years, especially with wildfires generally occurring between September to November. For a conservative analysis, staff uses the background ambient air quality concentrations from 2020 to 2022 to represent the baseline condition at the project site.

Health Effects of Criteria Pollutants

Below are descriptions of the health effects of criteria pollutants that are a concern in the regional study area. The California Health and Safety Code Section 39606 requires CARB to adopt ambient air quality standards at levels that adequately protect the health of the public, including infants and children, with an adequate margin of safety. Ambient air quality standards define clean air (CARB 2024b).

Ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and NO_x, including NO₂. Significant ozone production generally requires ozone precursors (ROG and NO_x) to be present in a stable atmosphere with strong sunlight.

Ozone can cause the muscles in the airways to constrict, trapping air in the alveoli, potentially leading to wheezing and shortness of breath. Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema, and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease. Long-term exposure to ozone is linked to aggravation of asthma and may be one of many causes of asthma

development. Long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children. The inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms, and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath.

People most at risk for adverse health effects from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures.

Particulate Matter. PM10 and PM2.5 represent size fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health. The health effects of particulate matter may include cardiovascular effects, such as cardiac arrhythmias and heart attacks, and respiratory effects, such as asthma attacks and bronchitis. Particulates can also reduce visibility.

Nitrogen Dioxide. Breathing air with a high concentration of NO₂ can irritate airways in the human respiratory system. Such exposures over short periods (as represented by the 1-hour standards) can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO₂ (as represented by the annual standards) may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO₂. Emissions of NO_x, which includes NO₂ and NO, react with other chemicals in the air and sunlight to form both particulate matter and ozone.

Carbon Monoxide. CO is a pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart,

and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Sulfur Dioxide. SO₂ is produced through the combustion of sulfur or sulfur-containing fuels such as coal. SO₂ is also a precursor to the formation of atmospheric sulfate and particulate matter (PM₁₀ and PM_{2.5}) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead. Lead has a range of adverse neurotoxin health effects and was predominately released into the atmosphere primarily via the combustion of leaded gasoline. The phase-out of leaded gasoline has resulted in decreasing levels of atmospheric lead.

Sensitive Receptors

SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a) defines sensitive receptors as: people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s).

Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods, with greater associated exposure to ambient air quality. Schools, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and sensitive receptors are located immediately adjacent to the project site. The sensitive receptors include single family residents along South Sonoma Avenue, West Cerini Avenue, and West Mount Whitney Avenue.

Appendix N Air Quality and Greenhouse Gas Emissions Study Volume 1 of the application (RCI 2023II Figures 3 & 4) details the sensitive receptors locations as it relates to the proposed project in this analysis. **Section 5.10, Public Health** includes a more detailed description of the sensitive receptors near the project.

Regulatory

The federal, state, and local laws and policies applicable to the control of criteria pollutant emissions and mitigation of air quality impacts appear in this section.

Federal

Federal Clean Air Act. The federal Clean Air Act (CAA) (42 U.S.C., § 7401 et seq.) establishes the statutory framework for regulation of air quality in the United States. Under the CAA, the U.S. EPA oversees the implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources.

Title I (Air Pollution Prevention and Control) of CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are

required to submit a State Implementation Plan (SIP) to the U.S. EPA for areas in nonattainment with NAAQS. The SIP must demonstrate how state and local regulatory agencies will institute rules, regulations, and other programs to attain NAAQS. Once approved by the U.S. EPA and published in the Federal Register, the local air district rules contained in the SIP become federally enforceable. State law makes CARB the lead agency for all purposes related to the components that are included in the California SIP. For all local air districts in California, the SIP relies on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations and limits on emissions from consumer products (CARB 2024c).

Title 40 Code of Federal Regulations Subchapter C –Air Programs. Title 40 of the Code of Federal Regulations (CFR) Part 51, Requirements for Preparation, Adoption, and Submittal of Implementation Plans, establishes the requirements for Nonattainment New Source Review (NSR). The NSR program requires new and modified stationary sources to obtain air permits and requires Best Available Control Technology (BACT) and emissions offsets.

40 CFR Part 52, Approval and Promulgation of Implementation Plans, including 40 CFR Part 52.21, Prevention of Significant Deterioration (PSD) of air quality, requires major sources or major modifications to major sources to obtain permits for attainment pollutants. The purpose of the federal PSD program is to ensure that attainment areas remain in attainment of NAAQS based upon a proposed facility's annual emissions. The proposed project would be a new source that does not have a rule listed emission source thus the PSD trigger levels are 250 tons per year for NO_x, VOC, SO₂, PM_{2.5} and CO. Because proposed project emissions would be less than prescribed amounts, the project would not be subject to PSD.

Title 40 Code of Federal Regulations Part 60 Standards of Performance for New Stationary Sources

The New Source Performance Standards (NSPS) Program. Spark ignition engines, including stationary engines fired on natural gas, landfill gas, gasoline, or propane, are subject to NSPS Subpart JJJJ, known as the ICE NSPS (40 C.F.R., § 60.4230, et al.). This rule includes emission standards applicable to manufacturers of spark ignition engines; owners of certified engines must maintain the engine and control device according to the manufacturer's emission-related written instructions and keep records of conducted maintenance to demonstrate compliance (40 C.F.R., § 60.4243). Emergency engines may be used primarily to provide power when the normal power source is interrupted. Operation of an emergency engine in non-emergency situations is limited to 100 hours for certain purposes, such as readiness testing and engine maintenance.

State

Generally, state law designates local air districts as having primary responsibility for the control of air pollution from all sources other than mobile sources while the control of vehicular air sources is the responsibility of CARB. (Health and Saf. Code, §39002)

CARB is also responsible for the state's overall air quality management, including, among other things, establishing CAAQS for criteria pollutants, identifying toxic air contaminants of statewide concern, and adopting measures to reduce the emissions of those toxics through airborne toxic control measures (ATCM), and regulating emissions of greenhouse gas emissions.

California Health and Safety Code

Section 40910 to 40930. These sections require air district permitting of stationary sources to be consistent with CARB approved Clean Air Plans.

Section 41700. This section states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

California Code of Regulations

U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The earliest (Tier 1) standards for large compression-ignition engines used in off-road mobile sources became effective in California in 1996. Since then, the Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 2006, and Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. The tiered engine exhaust standards and standards for fleets that are already in-use provide comprehensive regulation and control to reduce NOx and toxic diesel particulate matter (DPM) emissions from equipment throughout the State.

CARB In-Use Off-Road Diesel Fueled Fleets Regulation. The regulations for in-use off-road diesel equipment are designed to reduce NOx and DPM. Depending on the size of the fleet of equipment, the owner would need to ensure that the average emissions performance of the fleet meets certain state-wide standards (13 California Code of Regulations, Chapter 10, Section 2449.1). In lieu of improving the emissions performance of the fleet, electric systems can be installed to replace diesel equipment in the fleet average calculations. Presently, all equipment owners are subject to a five-minute idling restriction in the rule (13 California Code of Regulations, Chapter 10, Section 2449).

Local

Fresno County General Plan

Air Quality Element. The Air Quality Element of the Fresno County General Plan includes the following policies designed to reduce air pollutant emissions in the County (Fresno 2024):

- Policy OS-G.13 – Valley Fever Mitigation. The County shall continue to promote public awareness of Valley Fever risks relating to ground disturbing activities through the provision of educational materials, webpages and resource contact information. For projects involving ground disturbance on unpaved areas left undisturbed for 6 months or more, the County shall require developers to provide project-specific Valley Fever training and training materials.
- Policy OS-G.14 – Fugitive Dust Control Measures. The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing SJVAPCD's particulate matter of less than ten (10) microns (PM10) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.
- Policy OS-G.15 – Access Road Standards. The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.
- Policy OS-G.16 – Roadway Dust Control. The County shall continue to work to reduce PM10 and PM2.5 emissions from County maintained roads by considering shoulder treatments for dust control as part of road reconstruction projects.

SJVAPCD Rules and Regulations. The following SJVAPCD rules are applicable to the project to limit the generation of air pollutants in San Joaquin County.

- Regulation VIII (Fugitive PM10 Prohibitions) – Contains rules developed pursuant to U.S. EPA guidance for “serious” PM10 nonattainment areas. Rules included under this regulation limit fugitive PM10 emissions from the following sources: construction, demolition, excavation, extraction, and other earth moving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources.
- Rule 2010, Permits Required – The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.
- Rule 2201, New and Modified Source Review Rule – Applies to all new stationary sources or modified existing stationary sources that are subject to the SJVAPCD permit requirements. The rule requires review of the new or modified stationary source to ensure that the sources which are subject to the district permit

requirements and after construction, emit or may emit one or more affected pollutants.

- Rule 4101 (Visibility) – Limits the visible plume from any source to 20 percent opacity.
- Rule 4102 (Nuisance) – Prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public.
- Rule 4201, Particulate Matter Concentration – Limits particulate matter emissions from any single source operation to 0.1 g/dscf, which is equivalent to a PM10 emission factor of 0.4 g-PM10/bhp-hr.
- Rule 4701, Internal Combustion Engines – The rule limits the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.
- Rule 4702, Internal Combustion Engines – The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), and sulfur oxides (SOx) from internal combustion engines.
- Rule 4801 Sulfur Compounds – Requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume.

Cumulative

The proposed project would be in Fresno County and in the SJVAB, which is classified as a nonattainment area for the State 1-hour and 8-hour ozone standards¹ (SJVAPCD 2024a). The criteria air pollutants of greatest concern are ozone and PM10. The nonattainment status of the region and the SJVAB can be attributed to the region's development history and the regions natural topography of being surrounded by high mountains which trap many emissions below an inversion layer and the mountains known as a bowl affect. Past, present, and future development projects contribute to the region's adverse air quality conditions on a cumulative basis.

For an air quality cumulative analysis, a radius of six miles is normally used because based on staff's modeling experience, beyond six miles there is no statistically significant concentration overlap for nonreactive pollutant concentrations between two stationary emission sources. According to **Appendix A, Table A-1**, the existing, approved, pending and proposed projects of potential sources of criteria air pollutants within six miles of the project include FC-1: Akhavi LLC Project (3.6 miles southeast of the solar facility).

1 <https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status>

There are no existing, approved, pending and proposed projects of potential sources of criteria air pollutants within six miles of the PG&E utility switchyard.

The existing, approved, pending and proposed projects of potential sources of criteria air pollutants within six miles of the PG&E downstream network upgrades include:

- FC-2: Arroyo Pasajero Bridge Replacement Geotechnical (3.5 miles east of Scenario 2)
- FC-4: Kamm Avenue Pistachio (2.8 miles east of Scenario 1)
- FC-6: Seneca Resources Corporation Project (1.5 miles west of Scenario 3)
- FC-8: Gas Station and Convenience Store (1.1 miles west of Scenario 3)
- FC-9: Heartland Hydrogen Project (3.7 miles east of Scenario 1)
- FC-10: Agricultural Commercial Center (5.9 miles east of Scenarios 2 and 3)
- FC-11: Multi use/Freeway commercial development (1.2 miles west of Scenario 3)
- FC-14: Tranquility Solar Project (3.6 miles east of Scenario 1)
- FC-26: Manning 500/230 kV Substation Project (0.5 miles north of Scenario 1)
- FC-27: CES Electron Farm One (4.5 miles northwest of Scenario 1)
- FC 28: San Luis West Solar Project (0.6 miles east of Scenarios 2 and 3)
- FC 30: Key Energy Storage (Adjacent to Scenarios 2 and 3 which terminate at the Gates Substation)

Past, present, and reasonably foreseeable probable future air pollutant emissions could be attributable to each of the cumulative projects, especially those that involve construction activities or operation and maintenance (O&M) activities with substantial sources of air pollutants.

5.1.2 Environmental Impacts

AIR QUALITY Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AIR QUALITY Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, Air Quality

5.1.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The applicant estimated air pollutant emissions for construction and operational activities using California Emissions Estimator Model (CalEEMod, version 2022.1.1.19) and spreadsheet tools. Construction emissions quantification begins with considering the anticipated fleet of construction equipment (off-road), vendor and hauling truck trips, and worker vehicle trips, utility task vehicles (UTVs), and with helicopters separately itemized. The fleets and activity forecasts are based on the proposed project over an 18-month construction scenario and 36-month construction scenarios of concurrent activities (RCI 2023II; Appendix N, November 7, 2023). Quantification of daily maximum emissions reflects the applicant's understanding of the sequence of activities (RCI 2023II).

Staff reviewed the applicant-provided evaluation of CalEEMod files for operation-phase results for mobile sources, the liquid petroleum gas (LPG) generators as stationary sources, and other uses of transportation fuels and energy (natural gas) to provide landscaping and space heating for the O&M building.

Thresholds of Significance

SJVAPCD provides guidance to California Environmental Quality Act (CEQA) lead agencies through the *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI [SJVAPCD 2015a]). The SJVAPCD recommends the use of quantitative thresholds to determine the significance of temporary construction-related pollutant emissions and long-term operational-related pollutant emissions. These significance thresholds for annual emissions in tons per year are shown in **Table 5.1-3**. Compliance with a threshold of significance means the effect normally will be determined to be less than significant (CCR § 15064.7) (SJVAPCD 2015a). The SJVAPCD recommendations appear in **Table 5.1-3**.

TABLE 5.1-3 CRITERIA POLLUTANT EMISSIONS THRESHOLDS OF SIGNIFICANCE

Pollutant	Operational Thresholds (Tons per Year)	Construction Thresholds (Tons per Year)	Construction/Operational Screening Thresholds for AAQA¹ (lbs. per day)
NOx	10	10	100
ROG ²	10	10	100
PM10	15	15	100
PM2.5	15	15	100
SOx	27	27	100
CO	100	100	100

1 The GAMAQI provides a screening threshold of 100 pounds per day of any of the following pollutants: NOx, ROG, PM10, PM2.5, sulfur oxides (SOx), and CO

2 ROG are formed during combustion and evaporation of organic solvents. ROG are also referred to as VOC

Source: SJVAPCD 2015b²

In addition to the criteria pollutant thresholds outlined above, SJVAPCD has published the Ambient Air Quality Analysis project Daily Emissions Assessment guidance, which is summarized in Section 8.4.2, Ambient Air Quality Screening Tools, of the GAMAQI. The GAMAQI provides a screening threshold of 100 pounds per day of any of the following pollutants: NOx, ROG, PM10, PM2.5, sulfur oxides (SOx), and CO. The screening threshold was used to evaluate localized construction activities and operational activities separately. Per SJVAPCD's GAMAQI and Rule 9510 – Indirect Source Review, when assessing the significance of project-related impacts on local air quality, the impacts may be significant if on-site emissions from construction or operational activities exceed the 100 pounds per day screening level after implementation of all enforceable mitigation measures. The project would be subject to Rule 9510 because it would develop more than 9,000 square feet, which is the ambient air quality analysis screening level threshold for unconventional land use developments not identified as residential, commercial, or industrial (e.g., a solar facility).

If the screening criteria is exceeded for any pollutant, an ambient air quality assessment (AAQA) is required to demonstrate that the project would not cause or contribute to a violation of the relevant NAAQS or CAAQS. If modeled concentrations combined with background concentrations would result in an exceedance of a NAAQS or CAAQS, then SJVAPCD Rule 2201 requires that the maximum modeled concentration of each pollutant be compared to its corresponding Significant Impact Level (SIL). If modeled concentrations do not exceed the SIL, then the project would not result in a violation of ambient air quality standards and mitigation for that pollutant is not required.

Staff used SILs for the particulate matter portions of the analysis. In the project area, data in **Table 5.1-2** shows that the background levels of PM10 and PM2.5 exceed the

2 <https://ww2.valleyair.org/media/m2ecyxiw/1-cms-format-ceqa-air-quality-thresholds-of-significance-criteria-pollutants.pdf>

most-stringent standards in the baseline conditions. Staff compares the project's contribution to local criteria pollutant concentrations to SILs to determine whether the project's emissions would contribute significantly to those exceedances.

To determine if the project could contribute substantially to the existing PM₁₀ exceedances, this analysis relies on the U.S. EPA regulations defining PM₁₀ SILs for federal nonattainment areas (40 CFR 51.165(b)(2)) for 24-hour impacts (5 µg/m³) and for annual impacts (1 µg/m³). The same U.S. EPA regulation (40 CFR 51.165(b)(2)) also establishes a PM_{2.5} SIL value for 24-hour impacts (1.2 µg/m³). And prior to the effective date of the 2024 annual PM_{2.5} NAAQS, the U.S. EPA issued a recommendation to set the PM_{2.5} SIL value for annual impacts at 0.13 µg/m³ (effective May 6, 2024). In addition, for fugitive particulate matter impacts, the SJVAPCD has established SILs specific to fugitive PM₁₀ and PM_{2.5} in *APR 1925 Policy for District Rule 2201 AAQA Modeling* (SJVAPCD 2024b). According to this SJVAPCD policy, the SIL threshold for fugitive PM₁₀ is 10.4 µg/m³ for 24-hour averaging and 2.08 µg/m³ for annual averaging. For fugitive PM_{2.5}, the SIL threshold is 2.5 µg/m³ for 24-hour averaging and 0.63 µg/m³ for annual averaging.

5.1.2.2 Direct and Indirect Impacts

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

This section considers the project's consistency with the applicable air quality management plan. This is a qualitative determination that considers the combined effects of project construction and operation.

Construction and operation of the project would result in emissions of criteria pollutants including ozone precursors (such as ROG and NO_x) and PM. The SJVAPCD has prepared several air quality attainment plans to achieve ozone and particulate matter standards, the most recent of which include the 2024 Plan for the 2012 Annual PM_{2.5} Standard, 2020 Reasonably Available Control Technology (RACT) Demonstration for the 2015 8-Hour Ozone Standard and the 2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 PM₁₀ Maintenance Plan and Request for Re-designation, 2012 PM_{2.5} Plan, and 2015 Plan for the 1997 PM_{2.5} Standard. The SJVAB is in attainment for CO, SO₂, and Pb, and there are no attainment plans for those pollutants.

SJVAPCD has the responsibility to develop the applicable air quality management plans and regulations to achieve the air quality standards consistent with the plans. Additionally, SJVAPCD has the authority to adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards, as necessary to implement the air quality management plans.

To determine if a project would conflict with or obstruct implementation of the applicable air quality plan, lead agencies must demonstrate that a given project would not directly obstruct implementation of an applicable air quality plan and that the project would be consistent with the assumptions upon which the air quality plan is based (RCI 2023II). Each air quality management plan includes emission inventory, population, and employment growth forecasts that are relied upon for projecting how attainment is achieved.

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, and with the incorporation of the conditions of certification and/or mitigation measures described below, construction of the project would not conflict with or obstruct implementation of the applicable air quality plan.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction of these facilities would result in an increase in short-term employment compared to existing conditions. Construction activities and the associated jobs would not conflict with the long-term employment projections because the construction workforce for the project would be temporary in nature. Construction activities would be conditioned to include appropriate and best available emissions control measures, consistent with Fresno County General Plan policies for minimizing ozone precursors and particulate matter emissions.

All construction activities would occur in compliance with applicable federal, state, and local requirements, including those that are relied upon for attainment planning. The employment associated with the project would be consistent with the planning forecasts. Compliance with air permitting requirements, and other applicable requirements, ensures that proposed project emissions are included within the emission inventory forecasts that are relied upon for attainment planning. As discussed, project construction have the potential to conflict with existing air quality plans due to an exceedance of NO_x and CO emissions above SJVAPCD thresholds as shown in **Table 5.1-4** and **Table 5.1-5**. However, COC **AQ-SC6** would require the project owner to enter into a voluntary emissions reduction agreement (VERA) with SJVAPCD in order to fund programs locally or incorporate electric vehicles onsite. Implementation of this mitigation measure would ensure NO_x emissions are mitigated to less than significant. In addition, per SJVAPCD Rule 2201, emission offsets shall not be required for increases in CO in attainment areas if the applicant demonstrates that such emissions would not cause or contribute to a violation of AAQS. The project area is in attainment/ unclassified for CO AAQS. And as shown in **Tables 5.1-11** and **5.1-13**, project construction would not cause or contribute to any violation of the NAAQS or CAAQS for CO under any construction schedule. Therefore, CO emission offsets would not be required.

With incorporation of COC **AQ-SC1** through **AQ-SC6**, emissions from these project components would be reduced below the acceptable levels established in the applicable air quality management plans.

PG&E Utility Switchyard

As shown in **Table 5.1-4** and **Table 5.1-5**, the worst-case unmitigated construction emission rates, under Phase 6, for all criteria pollutants would be below the applicable SJVAPCD thresholds of significance. Therefore, the construction during Phase 6 (construction of the PG&E utility switchyard) would not conflict with or obstruct implementation of the applicable air quality plans of SJVAPCD. The PG&E Construction Measures for air quality identify measures to reduce fugitive dust during construction. Staff has concluded that these measures are sufficient to further reduce emissions from construction activities. Staff recommends Mitigation Measure (**MM**) **AQ-1**, which includes PG&E Construction Measures for air quality to further reduce construction emissions.

PG&E Downstream Network Upgrades

Minor emission sources during construction activities at the downstream network upgrades include diesel exhaust from heavy-duty equipment. Impacts from construction activities along these downstream network upgrades would be temporary in nature and dissipate as a function of distance. Accordingly, construction of the downstream network upgrades is not expected to involve sources of emissions that may lead to significant impacts or impacts of emissions other than those pollutants identified elsewhere in this analysis.

Fugitive dust emissions can create a nuisance and adverse effects. To ensure that fugitive dust emissions would not occur at levels that could adversely affect a substantial number of people, the project would be required to comply with SJVAPCD Rule 8021 (SJVAPCD 2004) for limiting visible emissions from fugitive dust, including unpaved roads, and would be subject to prohibitions on creating nuisances in the California Health & Safety Code. Furthermore, any interconnection facilities under PG&E's jurisdiction would comply with CPUC permitting requirements, relying on the CEC's CEQA review. Staff recommends **MM AQ-1**, which includes PG&E Construction Measures for air quality, to further reduce fugitive dust during construction of downstream network upgrades. Therefore, construction emissions from the downstream network upgrades would be further reduced below the acceptable levels established in the applicable air quality management plans.

Operation— Less Than Significant Impact

Based on the analysis below, operation of the project would not conflict with or obstruct implementation of the applicable air quality plan.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During operation of the project, an average of 12 permanent staff associated with the solar facility would be on-site daily, with additional staff during intermittent solar panel washing (17 staff), facility maintenance and repairs (4 staff), and vegetation management activities (12 staff). Up to 4 average permanent staff associated with the BESS would be on-site daily (RCI 2024ee). The operation and maintenance activities would result in limited emissions of ozone precursor and particulate matter. The emissions from worker automobile trips, maintenance with cranes, and emergency generator testing would occur at levels that would not obstruct implementation of the air quality management plans. New sources of emissions would be conditioned to comply with SJVAPCD air permitting requirements, including operating limitations and applicable emission standards that form the basis of attainment planning.

Operational activities would not exceed SJVAPCD annual thresholds of significance. However, **Table 5.1-9** shows that CO emissions during operation that exceed the daily screening threshold would trigger an AAQA analysis, therefore, the applicant performed an AAQA for CO. **Table 5.1-15** shows that these operational activities would not cause or contribute to a violation of any CO AAQS. Therefore, operation of this project element would not conflict with implementation of existing air quality plans. For these reasons, this project element would be consistent with the California SIP and SJVAPCD's attainment Plans.

PG&E Utility Switchyard

Operation and maintenance of the PG&E utility switchyard would be performed remotely by PG&E and therefore would result in minimal emissions from vehicle trips to and from the PG&E utility switchyard during operation. No diesel generators or other nonelectric equipment would be used that result in emissions of criteria air pollutants.

PG&E Downstream Network Upgrades

Once constructed, 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 (RCI 2024z). Operation and maintenance of the downstream network upgrades would be performed by PG&E and therefore would result in minimal emissions from vehicle trips to and from the downstream upgrades during operation. No diesel generators or other nonelectric equipment would be used that result in emissions of criteria air pollutants.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

This section quantifies the project's criteria pollutant emissions rates and focuses on whether project-related emissions of nonattainment criteria pollutants would exceed any of the applicable local air district significance thresholds.

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, and with the incorporation of the COCs and/or MMs described below, construction of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction of these facilities would cause emissions from the exhaust of the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site and fugitive dust from travel on paved and unpaved surfaces, grading, installing underground utilities, and material handling.

Construction activities would generate exhaust emissions from the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Construction would span a two to three-year period, and would involve mobilizing the heavy-duty construction equipment, site development and preparation, access road construction, and truck watering (twice a day). The range of mobile sources includes the fleet of off-road equipment, on-road vehicles such as haul trucks, and worker personal vehicles and pickup trucks used to transport workers around the construction site, utility task vehicles (UTVs) and helicopters. These mobile sources would emit from within the site boundaries and off-site along transportation routes accessing the site.

The project has included construction emission estimates based on an 18-month construction period, and a 36-month construction period. The construction phases would be equivalent in both construction scenarios, however there would be more days of construction phases overlapping in the 18-month scenario as compared to the 36-month construction period. The construction phases for the project include the following:

- Phase 1: Site Preparation
- Phase 2: Photo Voltaic (PV) Panel System
- Phase 3: Inverters, Transformers, Substation and Electrical
- Phase 4: Gen-tie
- Phase 5: BESS

The applicant also included emissions and impacts analysis of the PG&E Utility Switchyard as Phase 6 of the project (see additional discussion below under PG&E Utility Switchyard).

Emissions estimates reflect the maximum daily rates of emissions during overlapping activities. Where phases overlap in time, the daily rates of emissions are added together. The emissions results reflect the applicant's predictions of different phases overlapping in time (RCI 2023II), as described here.

36-Month Construction Year 1 Overlapping Phases (Phase 1 through Phase 3, and Phase 6):

- Site Preparation, PV panel system, Inverter, transformers, substation, and electrical installations overlaps
- PG&E utility switchyard installation

36-Month Construction Year 2 Overlapping Phases (Phase 2 through Phase 4, and Phase 6):

- PV Panel system, inverter, transformers, substation, and electrical installations overlaps
- Gen-tie installation
- PG&E utility switchyard installation

36-Month Construction Year 3 Overlapping Phases (Phase 2 through Phase 5):

- PV panel system, inverter, transformers, substation, and electrical installations overlaps
- Gen-tie installation
- BESS installation

18-Month Construction Year 1 Overlapping Phases (Phase 1 through Phase 5):

- Site preparation, PV panel system, inverter, transformers, substation, and electrical installations overlaps
- Gen-tie installation
- BESS installation

18-Month Construction Year 2 Overlapping Phases (Phase 2, Phase 3 and Phase 5):

- PV panel system, inverter, transformers, substation, and electrical installations overlaps
- BESS installation

The "Transmission Line Connection" phase would also contribute to emissions in the second year, as associated with the PG&E Interconnection Infrastructure, although the

applicant expects these activities to occur after the overall peak in activity at the site. Accordingly, emissions during installation of the transmission line connection would not contribute to the maximum daily rates of construction emissions although these emissions would be included in the overall total construction emissions.

Travel on Unpaved Access Roads. In Data Response Set 2 the applicant stated, "Access roads and access point to each project component would be finalized as detailed project design continues". The siting of access roads and access points would include consideration of the following:

- Existing paved roads within dedicated and maintained public rights-of-way
- Existing unmaintained gravel or dirt roads within a recorded public road easement
- Existing unmaintained gravel or dirt roads within project parcels
- Existing unmaintained gravel or dirt roads within non-project parcels, for which a third-party easement may be required

A site access plan would be expected to consider circulation, safety requirements, and emergency access to reduce construction traffic hazards and to maintain site access. The heaviest deliveries would require paved roads or improved and maintained gravel roads, such as those to the project substation, BESS facility, and gen-tie corridor. Access to the remaining solar facility would require some road improvements, and could be accessed via unpaved roads (e.g., compacted native soil or aggregate base) (RCI 2024k).

To manage the regional impact of particulate matter from large projects with unpaved roads, SJVAPCD Rule 8021 (SJVAPCD 2004) requires that these large projects of over 5 acres submit a Dust Control Plan (as shown in **Table 5.1-6**) to the air pollution control officer (APCO) prior to the start of any construction activity. Staff's proposed Conditions of Certification (COC) **AQ-SC1** through **AQ-SC4** are effective and comprehensive "best practices" for avoiding fugitive dust impacts during construction and would be as stringent as mitigation measures required by SJVAPCD Rule 8021.

Table 5.1-4 summarizes the maximum annual emissions rates anticipated during the nearly three years of construction activities over an 18-month construction period. The first-year analysis includes about a month's worth of initial phase groundwork anticipated according to the applicant's timeline of phases of the project. The annual emissions include all mobile sources, including emissions from within the site boundaries and those that occur along off-site transportation routes for supplies that would be sourced locally and outside of San Joaquin County (RCI 2023II). Staff is using the thresholds as above in **Table 5.1-3** to compare against to make significance determinations.

TABLE 5.1-4 MAXIMUM ANNUAL EMISSIONS (TONS PER YEAR), CONSTRUCTION WITHOUT MITIGATION (18-MONTH SCHEDULE)

Construction Activity	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 Total (ton/yr)	PM2.5 Total (ton/yr)
Year 1 Maximum, (Phases 1 to 4)	0.03	0.17	0.42	0.01	0.07	0.04
Year 2 Maximum (Phases 1 to 4)	6.97	76.2	212.2	1.2	14.5	7.8
Year 2 Maximum (Phase 5)	0.2	2.8	6.4	0.02	0.3	0.1
Year 2 Maximum (All Phases)	7.1	79.0	218.5	1.2	14.8	7.9
Year 3 Maximum (Phases 1 to 4)	1.6	17.7	70.5	0.14	3.2	1.5
Year 3 Maximum (Phase 5)	0.2	4.4	10.0	0.02	0.5	0.2
Year 3 Maximum (Phase 6-PG&E Utility Switchyard)	0.8	9.8	31.8	0.07	2.1	1.1
Year 3 Maximum, Unmitigated (All Phases)	2.6	31.9	112.3	0.2	5.8	2.7
Maximum year, Unmitigated Annual Emissions	7.1	79.0	218.5	1.2	14.8	7.9
SJVAPCD Thresholds of Significance	15	10	100	27	15	15
Threshold Exceeded?	No	Yes	Yes	No	No	No

Note: Some values have been rounded, **Bold** values indicate an exceedance of applicable threshold. Source: Activity estimates for off-road equipment and emissions estimates for each of the phases, including overlap during construction from applicant (RCI 2023II). Staff has removed the hydrogen construction phase to estimate emissions, as compared to the application (RCI 2023dd, Table 5.7-6).

Table 5.1-4 shows that, during the 18-month construction schedule, during the three years of construction, project emissions of NOx and CO during construction would exceed the SJVAPCD thresholds of significance without the implementation of any mitigation. The applicant recognized the potential for significant levels of emissions during construction and proposes to implement fugitive dust control during construction, including application of specific stabilizers and the use of water as necessary, such as water or surfactants approved for use in the State of California (RCI 2023II).

Table 5.1-5 summarizes the maximum annual emissions rates anticipated during the four years of construction activities during the 36-month construction period without implementation of any mitigation. The annual emissions include all mobile sources, including emissions from within the site boundaries and those that occur along off-site transportation routes for supplies that would be sourced locally and outside of San Joaquin County (RCI 2023II).

TABLE 5.1-5 MAXIMUM ANNUAL EMISSIONS (TONS PER YEAR), CONSTRUCTION WITHOUT MITIGATION (36-MONTH SCHEDULE)

Construction Activity	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 Total (ton/yr)	PM2.5 Total (ton/yr)
Year 1 Maximum, (Phases 1 to 4)	0.02	0.05	0.30	0.02	0.04	0.03
Year 2 Maximum, (Phases 1 to 4)	2.2	24.8	93.9	0.2	6.7	3.2
Year 2 Maximum, (Phase 6-PG&E Utility Switchyard)	0.5	6.6	25.4	0.1	1.1	0.5
Year 2 Maximum, (All Phases)	2.7	31.4	119.3	0.3	7.8	3.7
Year 3 Maximum, (Phases 1 to 4)	3.4	41.4	138.1	0.3	6.2	2.7
Year 3 Maximum, (Phase 5)	0.2	1.9	7.6	0.0	0.3	0.2
Year 3 Maximum, Unmitigated (All Phases)	3.6	43.3	145.7	0.3	6.5	2.9
Year 4 Maximum, (Phases 1 to 4)	2.4	27.1	62.6	0.8	3.6	2.1
Year 4 Maximum, (Phase 5)	0.2	5.1	6.8	0.04	0.8	0.3
Year 4 Maximum, Unmitigated (All Phases)	2.6	32.2	69.4	0.8	4.3	2.4
Maximum year, Unmitigated Annual Emissions	3.6	43.3	145.7	0.8	7.8	3.7
SJVAPCD Thresholds of Significance	15	10	100	27	15	15
Threshold Exceeded?	No	Yes	Yes	No	No	No

Note: Some values have been rounded, **Bold** values indicate an exceedance of applicable threshold.
Source: Activity estimates for off-road equipment and emissions estimates for each of the phases, including overlap during construction from applicant (RCI 2023II). Staff has removed the hydrogen construction phase to estimate emissions, as compared to the application (RCI 2023dd Table 5.7-6).

Table 5.1-5 shows that, during the 36-month construction schedule, the third year of construction would be the maximum unmitigated annual emissions. Project emissions of NOx and CO during construction would exceed the applicable thresholds. The applicant recognized the potential for significant levels of emissions during construction and proposes to implement fugitive dust control during construction, including application of specific stabilizers and the use of water as necessary, such as water or surfactants approved for use in the State of California (RCI 2023II).

The SJVAB is a nonattainment area for ozone, PM10, and PM2.5 under the NAAQS and/or CAAQS. The current air quality in the SJVAB is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emission sources. Projects that emit these pollutants or their precursors (i.e., ROG and NOx for ozone) potentially contribute to poor air quality. Construction activities without mitigation would exceed the SJVAPCD's recommended thresholds of significance during construction, as shown in **Table 5.1-4** and **Table 5.1-5**, for NOx and CO for the 18-Month and 36-Month construction scenarios. Because these annual emissions from the

project's construction would exceed significance thresholds, the project could contribute cumulatively to a net increase in criteria pollutants without mitigation.

To reduce these emissions, staff identifies proposed COC **AQ-SC1** to **AQ-SC6** to sufficiently reduce NOx and PM2.5 from equipment and to also substantially reduce PM10, including fugitive dust. Staff's proposed conditions of certification are effective and comprehensive "best practices" for avoiding air quality impacts during construction.

COC **AQ-SC1** would require an on-site construction mitigation manager who would be responsible for the implementation and compliance of the overall construction mitigation program. The documentation of the ongoing implementation and compliance with the construction mitigation program would be provided in the monthly compliance report that is required in staff's recommended COC **AQ-SC2**.

COC **AQ-SC3** formalizes the construction fugitive dust control requirements. These requirements include paving or stabilizing with soil binders the main access roads through the facility and delivery areas before construction begins on that part of the site. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity-specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction.

COC **AQ-SC4** would monitor activities for potential visible dust emissions and require responding to situations when the control measures required by COC **AQ-SC3** are not working effectively to limit the transport of fugitive dust plumes from construction areas.

COC **AQ-SC5** would mitigate diesel engine emissions of NOx and particulate matter (PM10 and PM2.5) by mandating use of diesel-fueled construction equipment that complies with Tier 4 Final emission standards for off-road engines. COC **AQ-SC6** would require the project owner to enter into a VERA with the SJVAPCD in order to fund programs locally or incorporate electric vehicles onsite. Implementation of this mitigation measure would provide important mitigation to reduce NOx emissions to less than significant.

Table 5.1-7 and **Table 5.1-8** summarize the mitigated maximum annual rates of construction emissions with COC **AQ-SC1** to **AQ-SC6** for the 18-month schedule and for the 36-month schedule respectively. The proposed conditions of certification are based on staff's recommendations in prior renewable energy projects, and the conditions would be as stringent as the applicant's proposed mitigation measures.

This analysis presents staff's recommendations for "effective and comprehensive" PM10 and PM2.5 emissions controls through COC **AQ-SC1** to **AQ-SC5**. These measures would be consistent with the SJVAPCD's guidelines (SJVAPCD 2000) for ensuring that the impact of construction PM10 and PM2.5 emissions would be reduced. Additionally, the impacts of PM10 and PM2.5 concentrations are evaluated further under criterion "c" to quantify the effects of PM10 and PM2.5 construction emissions in relation to the

ambient air quality standards. The analysis shows that the project's contributions to the concentrations of PM10 and PM2.5 at nearest sensitive receptor locations would be below the relevant SILs.

All air quality impacts during construction would be considered short-term effects. SJVAPCD Environmental Review Guidelines Procedures for implementing CEQA (SJVAPCD 2000) recognize that construction activities can cause substantial increases in emissions that may lead to localized concentrations of particulate matter and may affect PM10 compliance with ambient air quality standards on a regional basis. To avoid this impact, the SJVAPCD suggests using feasible control measures shown to be effective and comprehensive, and "effective and comprehensive" can be reasonably implemented to reduce PM10 emissions from construction to a level considered less than significant (SJVAPCD 2000).

Additionally, as shown in **Table 5.1-6**, the Applicant would implement control measures during project construction activities pursuant to Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.

TABLE 5.1-6 SJVAPCD RULE 8021 MEASURES APPLICABLE TO THE PROJECT

Rule 8021 No.	Measure
A.1	Pre-water site sufficient to limit visible dust emissions (VDE) to 20 percent opacity.
A.2	Phase work to reduce the amount of disturbed surface area at any one time.
B.1	Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity; or
B.2	Construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity. If using wind barriers, control measure B.1 above shall also be implemented.
B.3	Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the conditions of a stabilized unpaved road surface
C.1	Restrict vehicular access to the area.
C.2	Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acre or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.
5.3.1	An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
5.3.2	An owner/operator shall post speed limit signs that meet state and federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.
5.4.1	Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20 percent opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

TABLE 5.1-6 SJVAPCD RULE 8021 MEASURES APPLICABLE TO THE PROJECT

Rule 8021 No.	Measure
5.4.2	Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.
6.3.1	An owner/operator shall submit a Dust Control Plan to the Air Pollution Control Officer (APCO) prior to the start of any construction activity on any site that will include ten acres or more of disturbed surface area for residential developments, or five acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.
6.3.3	The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity
6.3.4	A Dust Control Plan shall contain all the [administrative] information described in Section 6.3.6 of this rule. The APCO shall approve, disapprove, or conditionally approve the Dust Control Plan within 30 days of plan submittal. A Dust Control Plan is deemed automatically approved if, after 30 days following receipt by the District, the District does not provide any comments to the owner/operator regarding the Dust Control Plan

Source: SJVAPCD 2004

The applicant for the project has proposed mitigation measures that staff would implement to reduce impacts in combination with the COC **AQ-SC1** to **AQ-SC6**. The project would comply with SJVAPCD Rule 9510, Indirect Source Review, which requires large development projects to reduce exhaust emissions from construction equipment by 20 percent for NOx and 45 percent for PM10 compared to the statewide average or demonstrate use of a clean fleet (such U.S. EPA Tier 4 equipment). As indicated in the application, the project would use all U.S. EPA Tier 4 equipment (RCI 2023dd), the project would be consistent with Rule 9510, Indirect Source Review. Additionally, with the SJVAPCD Rule 9510 requirement, the project would comply with dust mitigation per Rule 8021 which would reduce dust emissions.

The CO emissions during construction of the project would exceed the SJVAPCD threshold of 100 tpy as shown in **Table 5.1-7** and **Table 5.1-8**. However, per SJVAPCD Rule 2201, emission offsets shall not be required for increases in CO in attainment areas if the applicant demonstrates that such emissions would not cause or contribute to a violation of AAQS. The project area is in attainment/unclassified for CO AAQS and **Table 5.1-11** and **Table 5.1-13** show that the project construction would not cause or contribute to a violation of any CO AAQS. Therefore, CO emission offsets would not be required, and CO impacts of all project construction activity would be less than significant.

TABLE 5.1-7 MAXIMUM ANNUAL EMISSIONS (TONS PER YEAR), CONSTRUCTION WITH MITIGATION (18-MONTH SCHEDULE)

Construction Activity	ROG (tpy)	NOx (tpy)	CO (tpy)	SOx (tpy)	PM10 Total (tpy)	PM2.5 Total (tpy)
Year 1 Maximum, (All Phases)	0.03	0.17	0.42	0.01	0.07	0.04
Year 2 Maximum, (All Phases)	7.1	79.0	218.5	1.2	14.8	7.9
Year 3 Maximum, emissions (All Phases)	2.6	31.9	112.3	0.2	5.8	2.7
Maximum year, Unmitigated Annual Emissions	7.1	79.0	281.5	1.2	14.8	7.9
Year 1 VERA Offset	--	(0.00)	--	--	--	--
Year 2 VERA Offset	--	(69.05)	--	--	--	--
Year 3 VERA Offset	--	(21.95)	--	--	--	--
Total Project VERA Offset (Total Tons)	--	(91.0)	--	--	--	--
Maximum Annual Emissions with Mitigation ¹ (VERA annually)	--	9.95	--	--	--	--
SJVAPCD Thresholds of Significance	15	10	100	27	15	15
Threshold Exceeded?	No	No	Yes²	No	No	No

Notes: Some values have been rounded, **Bold** values indicate an exceedance of applicable threshold.

¹ The mitigated emissions estimates shown in this table are for illustrative purposes. Depending on the ultimate availability of electric construction equipment, as allowed for by Staff Recommended Condition of Certification **AQ-SC6**, the final VERA offset amounts may differ from those shown in this table (RCI 2023dd).

² CO emissions would exceed annual thresholds. However, as explained in the text, since the project area is in attainment/unclassified for CO and **Table 5.1-11** shows that CO emissions would not cause or contribute to a violation of any CO AAQS, CO emission offsets would not be required per SJVAPCD Rule 2201.

Source: Activity estimates for off-road equipment and emissions estimates for each of the phases, including overlap during construction from applicant (RCI 2023II). Staff has removed the hydrogen construction phase to estimate emissions, as compared to the application (RCI 2023dd, Table 5.7-12).

TABLE 5.1-8 MAXIMUM ANNUAL EMISSIONS (TONS PER YEAR), CONSTRUCTION WITH MITIGATION (36-MONTH SCHEDULE)

Construction Activity	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 Total (ton/yr)	PM2.5 Total (ton/yr)
Year 1 Maximum, (All Phases)	0.02	0.05	0.30	0.02	0.04	0.03
Year 2 Maximum, (All Phases)	2.7	31.4	119.3	0.3	7.8	3.7
Year 3 Maximum, Unmitigated (All Phases)	3.6	43.3	145.7	0.3	6.5	2.9
Year 4 Maximum, Unmitigated (All Phases)	2.6	32.2	69.4	0.8	4.3	2.4
Maximum, Unmitigated (All Phases)	3.6	43.3	145.7	0.8	7.8	3.7
Year 1 VERA Offset	--	(0.00)	--	--	--	--

TABLE 5.1-8 MAXIMUM ANNUAL EMISSIONS (TONS PER YEAR), CONSTRUCTION WITH MITIGATION (36-MONTH SCHEDULE)

Construction Activity	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 Total (ton/yr)	PM2.5 Total (ton/yr)
Year 2 VERA Offset	--	(21.45)	--	--	--	--
Year 3 VERA Offset	--	(33.35)	--	--	--	--
Year 4 VERA Offset	--	(22.25)	--	--	--	--
Total VERA Offset (Total Tons)	--	(77.0)	--	--	--	--
Maximum Annual Emissions with Mitigation ¹ (VERA annually)	--	9.95	--	--	--	--
SJVAPCD Thresholds of Significance	15	10	100	27	15	15
Threshold Exceeded?	No	No	Yes²	No	No	No

Notes: Some values have been rounded, **Bold** values indicate an exceedance of applicable threshold.

¹ The mitigated emissions estimates shown in this table are for illustrative purposes. Depending on the ultimate availability of electric construction equipment, as allowed for by Staff Recommended Condition of Certification **AQ-SC6**, the final VERA offset amounts may differ from those shown in this table (RCI 2023dd).

² CO emissions would exceed annual thresholds. However, as explained in the text, since the project area is in attainment/unclassified for CO and **Table 5.1-13** shows that CO emissions would not cause or contribute to a violation of any CO AAQS, CO emission offsets would not be required per SJVAPCD Rule 2201.

Source: Activity estimates for off-road equipment and emissions estimates for each of the phases, including overlap during construction from applicant (RCI 2023II). Staff has removed the hydrogen construction phase to estimate emissions, as compared to the application (RCI 2023dd, Table 5.7-12).

PG&E Utility Switchyard

As shown in **Table 5.1-5**, construction of the PG&E utility switchyard in the 36-month construction scenario would contribute to total NOx and CO emissions that would exceed SJVAPCD annual significance thresholds. As shown in **Table 5.1-4**, in the 18-month construction scenario, construction of the PG&E utility switchyard would contribute to NOx and CO emissions that would exceed SJVAPCD annual significance thresholds. As shown in **Tables 5.1-11** and **5.1-13**, however, impacts from unmitigated construction emissions, would not exceed the NAAQS or CAAQS for CO under any construction schedule. **Tables 5.1-12** and **5.1-14** show that PM10 and PM2.5 impacts from unmitigated project construction emissions would not exceed SILs levels under any construction schedule.

Therefore, construction of the entire project, including the PG&E utility switchyard, would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standards. For the PG&E utility switchyard, staff recommends mitigation measure **(MM) AQ-1**, which includes PG&E Construction Measures for air quality to

reduce construction emissions, and thus further reduce emissions of criteria pollutants below applicable standards.

PG&E Downstream Network Upgrades

The downstream network upgrades installation would be completed in approximately 12 to 16 weeks; at any one location the construction would take between 2 and 3 weeks (RCI 2024z). Impacts from construction activities within the linears of the downstream network upgrades would be temporary in nature and dissipate as a function of distance.

Operation— Less Than Significant Impact

Based on the analysis below, operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation emissions would result from off-site vehicle trips for worker commutes, material deliveries, site security, and facility upkeep emissions from the proposed solar facility which would also have one O&M building, and from occasional liquid petroleum gas (LPG) fuel combustion by the emergency generators at the substation locations. Additionally, minor emissions would be caused by routine solar panel washings, consumer product use, and landscaping at the O&M building.

Table 5.1-9 shows daily emissions rates and **Table 5.1-10** shows annual emissions rates for the different project effects of the O&M activities, including the use of vehicles, the emergency generators, and other miscellaneous sources, separately discussed below.

TABLE 5.1-9 DAILY EMISSIONS DURING OPERATION

Emission Source	ROG (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 Total (lb/day)	PM2.5 Total (lb/day)
Solar Facility	15.77	86.06	127.15	0.24	7.90	4.23
Emergency Generator Testing (3)	1.21	1.73	3.47	0.0	0.0	0.0
Total, Daily Emissions from Operation	16.98	87.79	130.62	0.24	7.90	4.23
APCD Screening Thresholds for AAQA	100	100	100	100	100	100
Threshold Exceeded?	No	No	Yes¹	No	No	No

1 CO emissions would exceed daily screening threshold to trigger an ambient air quality assessment (AAQA). Therefore, an AAQA is required to demonstrate that the project would not cause or contribute to a violation of the relevant NAAQS or CAAQS. **Table 5.1-15** shows that CO emissions would not cause or contribute to a violation of any CO AAQS.

Source: Activity estimates from applicant (RCI 2023II). Staff emissions estimates using CalEEMod spreadsheets provided by the applicant (RCI 2023II) and emergency generator hourly calculations from Data Response Set 3 Appendix B and C (RCI 2024s).

TABLE 5.1-10 ANNUAL EMISSIONS DURING OPERATION

Emission Source	ROG (ton/yr)	NOx (ton/yr)	CO (ton/yr)	SOx (ton/yr)	PM10 Total (ton/yr)	PM2.5 Total (ton/yr)
Solar Facility	1.25	0.33	2.79	5.08	0.07	0.03
Emergency Generator Testing (3)	0.087	0.061	0.173	0.00	0.00	0.00
Road and Fence Repair	0.02	0.08	0.11	0.01	0.01	0.01
Road Reconditioning	0.07	0.50	0.70	<0.01	0.06	0.03
Solar Panel Washing	0.05	0.27	0.44	0.01	0.02	0.02
Vegetation and Pest Management	0.2	1.95	3.84	0.01	0.08	0.06
Total, Annual Emissions from Operation	1.68	3.19	8.05	5.11	0.24	0.15
APCD Thresholds of Significance	10	10	27	100	15	15
Threshold Exceeded?	No	No	No	No	No	No

Source: Activity estimates from applicant (RCI 2023II). Staff emissions estimates using CalEEMod spreadsheets provided by the applicant (RCI 2023II) and emergency generator annual calculations from Data Response Set 3 Appendix B and C (RCI 2024s).

Vehicle Trips and O&M Equipment. Proposed project operations with maintenance and panel washing at the solar energy generation facility would require use of motor vehicles and off-road equipment including mobile cranes. The project would operate continuously, seven days a week, until the anticipated repowering or decommissioning in 35 years. Up to 12 average permanent staff associated with the solar facility would be on-site daily, with up to seventeen additional staff during intermittent solar panel washing, ongoing facility maintenance and repairs, and vegetation management activities. Up to four average permanent staff associated with the BESS would be on-site daily (RCI 2023II). Maintenance typically would include the following: panel repairs; panel washing; maintenance of transformers, inverters, energy storage system, hydrogen components and other electrical equipment; road and fence repairs; and vegetation and pest management. The applicant anticipates reconditioning roads approximately once per year, such as after a heavy storm event that may cause destabilization or erosion. The applicant has stated solar panels would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers. No heavy equipment would be used during normal operation. O&M vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance and water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement. No helicopter use is proposed during routine operations although they may be used for emergency maintenance or repair activities (RCI 2023II).

Stationary Sources – Liquid Propane Gasoline (LPG) Emergency Engine. The proposed project would include up to three emergency engines. The engines would be rated at 230 break horsepower (BHP) and would run on LPG or propane. The annual

use of this engine is not expected to exceed 100 hours per year (RCI 2023II). The completeness determination letter for the project dated May 7, 2024, is provided as Appendix A to Data Response Set 4 (RCI 2024u), and the SJVAPCD provided recommendations for the engines in the form of a draft authority to construct (ATC) sent to CEC on December 23, 2024 (CEC 2025b). The draft ATC contains permit conditions for the project stationary sources that the SJVAPCD would have imposed but for CEC's in-lieu authority over the project. These conditions are reflected in COCs **AQ-1** through **AQ-18**.

Miscellaneous Operational Emissions. Miscellaneous operational emissions would occur from use of the O&M building (10,400 square-feet) at the solar facility, where energy would be consumed for O&M building heating and cooling needs and due to the periodic use of architectural coatings and landscaping, etc. Emissions from these miscellaneous activities are counted using estimates for the typical occupation and use of the O&M building, with defaults from CalEEMod (RCI 2023II).

Table 5.1-10 shows that the project would not exceed any thresholds of significance for annual emissions during the operation phase. **Table 5.1-9** shows that CO emissions during operation would exceed the daily screening threshold to trigger an AAQA analysis and **Table 5.1-15** shows that the project would not cause or contribute to a violation of any CO AAQS. Operations would not result in a cumulatively considerable net increase of any criteria pollutant.

PG&E Utility Switchyard

A site access plan would be expected to consider circulation, safety requirements, and emergency access to reduce construction traffic hazards and to maintain site access. The heaviest deliveries would require paved roads or improved and maintained gravel roads to the PG&E utility switchyard (RCI 2024k).

Operation and maintenance of the PG&E utility switchyard would be performed remotely by PG&E and therefore would result in minimal emissions from vehicle trips to and from the PG&E utility switchyard during operation. No diesel generators or other nonelectric equipment would be used that result in emissions of criteria air pollutants.

PG&E Downstream Network Upgrades

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 (RCI 2024z). Operation and maintenance of the downstream network upgrades would be performed by PG&E and therefore would result in minimal emissions from vehicle trips to and from the downstream upgrades during operation. No diesel generators or other nonelectric equipment would be used that result in emissions of criteria air pollutants.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

This section describes the effect of proposed project emissions on the ambient air pollutant concentrations and identifies sensitive receptors potentially impacted by project construction and operations.

Staff considers any new AAQS exceedance or a substantial contribution to any existing AAQS exceedance caused by the project's emissions to be substantial evidence of potentially significant impacts that would require the evaluation of potential mitigation measures.

Staff's concern for this case focuses on NO₂, CO, SO₂, PM₁₀, and PM_{2.5} in the SJVAPCD region due to the San Joaquin Valley's unique air quality challenges, including its persistent non-attainment status for particulate matter and ozone, which are influenced by these pollutants. **Section 5.10, Public Health** discusses the results of toxic air contaminants for both construction and operation.

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, and with the incorporation of the conditions of certification and/or mitigation measures described below, construction of the project would not expose sensitive receptors to substantial pollutant concentrations.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction emissions of criteria pollutants, including NO₂, CO, SO₂, PM₁₀, and PM_{2.5}, have been evaluated under criterion "b" of the CEQA environmental checklist above.

The applicant provided an air dispersion modeling analysis for NO₂, CO, SO₂, PM₁₀, and PM_{2.5} impacts during construction (RCI 2024I; Air Quality Responses, April 24, 2024). The applicant conducted the air dispersion modeling using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD [Version 22112]) consistent with the SJVAPCD *Guidance for Air Dispersion Modeling* document³ (RCI 2024s). Staff obtained AERMOD-ready meteorological data from the Mendota station (Station ID 99005), which was pre-processed with AERMET version 18081, from the SJVAPCD. The meteorological data is from years 2007 through 2011, which meets the U.S. EPA requirement of five years of representative meteorological data. The meteorological station is approximately 17-miles northwest from the nearest point of the project site and is representative of the conditions at the project site (RCI 2023II).

Staff reviewed the applicant's dispersion modeling and determined that an independent staff analysis would be needed to reflect greater levels of on-site activity and to

³ https://ww2.valleyair.org/media/zbhrg22/modeling_guidance.pdf

incorporate changes made to the proposed property boundary by the applicant after the applicant's original dispersion modeling.

Table 5.1-11 shows the results of dispersion modeling conducted by staff to reflect the emissions quantified in this impact analysis under criterion "b." The project impact column shows the worst-case impacts of the project from modeling. The background column shows the highest concentrations from the prior three years (2020-2022), from **Table 5.1-2**. The total impact column shows the sum of the existing background condition plus the maximum modeled impact predicted by the modeling analysis. The AAQS column shows the applicable AAQS.

TABLE 5.1-11 SUMMARY OF AAQA RESULTS FOR NO₂, CO, AND SO₂ DURING 18-MONTH CONSTRUCTION SCHEDULE						
Pollutant	Averaging Period	Background (µg/m³)	Project Impact (µg/m³)	Total Impact (µg/m³)	AAQS (µg/m³)	Exceedance
NO ₂	1-hour - NAAQS	115.7	58.1	173.8	188	No
	1-hour - CAAQS	115.7	92.7	208.4	339	No
	Annual - NAAQS	22.6	1.4	24.0	100	No
	Annual - CAAQS	22.6	1.4	24.0	57	No
CO	1-hour - NAAQS	3,040.4	2,497.0	5,537.4	40,000	No
	1-hour - CAAQS	3,040.4	2,497.0	5,537.4	23,000	No
	8-hour - NAAQS	2,175.5	717.1	2,892.6	10,000	No
	8-hour - CAAQS	2,175.5	717.1	2,892.6	10,000	No
SO ₂	1-hour - NAAQS	22.6	3.72	26.3	196	No
	1-hour - CAAQS	22.6	3.72	26.3	655	No

Sources: RCI 2024l, RCI 2024s, with CEC staff analysis.

Table 5.1-11 shows that the NO₂, CO, and SO₂ impacts during an 18-month construction schedule would be below the NAAQS and CAAQS for all averaging periods.

For PM₁₀ and PM_{2.5} impacts analysis, **Table 5.1-2** shows that the background levels of PM₁₀ and PM_{2.5} exceed the most-stringent standards in the baseline conditions. Therefore, staff compares the project's contribution to local criteria pollutant concentrations to SILs to determine whether the project's emissions would contribute significantly to those exceedances. **Table 5.1-12** shows that impacts from PM₁₀ and PM_{2.5} emissions, including fugitive and exhaust sources during an 18-month

construction schedule, would be below the SILs for 24-hour and annual averaging periods. In addition, the impacts to the general population and sensitive populations during construction would be further reduced with the implementation of COC **AQ-SC1** through **AQ-SC5**.

TABLE 5.1-12 SUMMARY OF AAQA RESULTS FOR PM10 AND PM2.5 DURING 18-MONTH CONSTRUCTION SCHEDULE

Pollutants	Averaging Period	Project Impact ($\mu\text{g}/\text{m}^3$)	SIL ($\mu\text{g}/\text{m}^3$)	Exceedance
PM10	24-hour Exhaust	0.72	5.00	No
	24-hour Fugitive	8.21	10.40	No
	Annual Exhaust	0.02	1.00	No
	Annual Fugitive	0.87	2.08	No
PM2.5	24-hour Exhaust	0.72	1.20	No
	24-hour Fugitive	1.97	2.50	No
	Annual Exhaust	0.02	0.13	No
	Annual Fugitive	0.21	0.63	No

Sources: RCI 2024l, RCI 2024s, with CEC staff analysis.

Table 5.1-13 shows that under a 36-month construction schedule, NO_2 , CO, and SO_2 impacts would be below the NAAQS and CAAQS for all averaging periods.

TABLE 5.1-13 SUMMARY OF AAQA RESULTS FOR NO_2 , CO, AND SO_2 DURING 36-MONTH CONSTRUCTION SCHEDULE

Pollutant	Averaging Period	Background ($\mu\text{g}/\text{m}^3$)	Project Impact ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	AAQS ($\mu\text{g}/\text{m}^3$)	Exceedance
NO_2	1-hour - NAAQS	115.7	40.2	163.6	188	No
	1-hour - CAAQS	115.7	65.5	188.9	339	No
	Annual - NAAQS	22.6	1.0	35.8	100	No
	Annual - CAAQS	22.6	1.0	35.8	57	No
CO	1-hour - NAAQS	3,040.4	1,772.9	5,759.6	40,000	No
	1-hour - CAAQS	3,040.4	1,772.9	5,759.6	23,000	No
	8-hour - NAAQS	2,175.5	508.7	3,372.7	10,000	No
	8-hour - CAAQS	2,175.5	508.7	3,372.7	10,000	No
SO_2	1-hour - NAAQS	22.6	2.64	45.0	196	No
	1-hour - CAAQS	22.6	2.64	45.0	655	No

Sources: RCI 2024l, RCI 2024s, with CEC staff analysis.

Table 5.1-14 shows that under a 36-month construction schedule, PM10 and PM2.5 impacts from both fugitive and exhaust sources would be below SILs for 24-hour and annual averaging periods. In addition, the impacts to the general population and sensitive populations during construction would be further reduced with the implementation of COC **AQ-SC1** through **AQ-SC5**. Therefore, the project construction activities under a 36-month construction schedule would not expose sensitive receptors to substantial concentrations of particulate matters.

TABLE 5.1-14 SUMMARY OF AAQA RESULTS FOR PM10 AND PM2.5 DURING 36-MONTH CONSTRUCTION SCHEDULE

Pollutant	Averaging Period	Project Impact ($\mu\text{g}/\text{m}^3$)	SIL ($\mu\text{g}/\text{m}^3$)	Exceedance
PM10	24-hour Exhaust	0.52	5.00	No
	24-hour Fugitive	6.65	10.40	No
	Annual Exhaust	0.02	1.00	No
	Annual Fugitive	0.70	2.08	No
PM2.5	24-hour Exhaust	0.52	1.20	No
	24-hour Fugitive	1.60	2.50	No
	Annual Exhaust	0.02	0.13	No
	Annual Fugitive	0.17	0.63	No

Sources: RCI 2024l, RCI 2024s, with CEC staff analysis.

Construction-phase emissions from these project elements would not expose sensitive receptors to substantial concentrations for any criterial air pollutants (i.e., NO₂, CO, SO₂, PM10, and PM2.5).

PG&E Utility Switchyard

The applicant included the construction emission sources for the PG&E utility switchyard in the ambient air quality impacts analysis for the Darden project. Therefore, the project impacts shown in **Tables 5.1-11** through **Table 5.1-14** include emissions from the PG&E utility switchyard.

Tables 5.1-11 through **Table 5.1-14** show that construction of the PG&E utility switchyard would not expose sensitive receptors to substantial pollutant concentrations. Staff recommends **MM AQ-1**, which requires generalized procedures to reduce construction emissions, and thus further reduce pollutant concentrations from construction activities.

PG&E Downstream Network Upgrades

The downstream network upgrades installation would be completed in approximately 12 to 16 weeks; at any one location the construction would take between 2 and 3 weeks (RCI 2024z). Impacts from construction activities within the linears of the downstream network upgrades would be temporary in nature and dissipate as a function of distance. Accordingly, construction of the downstream network upgrades is not expected to involve sources of emissions that may lead to odor impacts or impacts of emissions other than those pollutants identified elsewhere in this analysis.

Operation– *Less Than Significant Impact*

Based on the analysis below, operation of the project would not expose sensitive receptors to substantial pollutant concentrations.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation-phase emissions of criteria pollutants are evaluated under criterion “b” of this analysis (**Table 5.1-9** and **Table 5.1-10**), and emissions during operation would not exceed the annual thresholds of significance (SJVAPCD 2024b). CO emissions during operation would exceed the daily screening threshold to trigger an AAQA analysis, but **Table 5.1-15** shows that the project would not cause or contribute to a violation of any CO AAQS.

With the implementation of recommended COCs for operation site dust control (**AQ-SC1** through **AQ-SC5**) and for implementing stationary source permit conditions for the emergency generators (**AQ-1** through **AQ-18**), the operation emissions would be further reduced and controlled consistent with applicable requirements.

Table 5.1-15 shows operational AERMOD results for NO₂, CO, and SO₂. **Table 5.1-16** shows operational AERMOD results for PM₁₀ and PM_{2.5}. The maximum air quality impacts on nearby sensitive receptors from the solar facility are below both the Ambient Air Quality Standards (AAQS) and Significant Impact Levels (SILs). Operation emissions of criteria pollutants would not expose sensitive receptors to substantial pollutant concentrations.

TABLE 5.1-15 OPERATIONAL AAQA RESULTS SUMMARY FOR NO₂, CO, AND SO₂						
Pollutant	Averaging Period	Background (µg/m³)	Project Impact (µg/m³)	Total Impact (µg/m³)	AAQS (µg/m³)	Exceedance
NO ₂	1-hour - NAAQS	115.7	32.4	148.1	188	No
	1-hour - CAAQS	115.7	26.2	141.9	339	No
	Annual - NAAQS	22.6	1.4	24.0	100	No
	Annual - CAAQS	22.6	1.4	24.0	57	No
CO	1-hour - NAAQS	3,040.4	29.7	3,070.1	40,000	No
	1-hour - CAAQS	3,040.4	29.7	3,070.1	23,000	No
	8-hour - NAAQS	2,175.5	9.7	2,185.2	10,000	No
	8-hour - CAAQS	2,175.5	9.7	2,185.2	10,000	No

TABLE 5.1-15 OPERATIONAL AAQA RESULTS SUMMARY FOR NO₂, CO, AND SO₂

Pollutant	Averaging Period	Background (µg/m ³)	Project Impact (µg/m ³)	Total Impact (µg/m ³)	AAQS (µg/m ³)	Exceedance
SO ₂	1-hour - NAAQS	22.6	0.05	22.6	196	No
	1-hour - CAAQS	22.6	0.05	22.6	655	No

Sources: RCI 2024l, RCI 2024s, with CEC staff analysis.

Table 5.1-16 Operational AAQA Results Summary for PM₁₀ and PM_{2.5}

Pollutants	Averaging Period	Project Impact (µg/m ³)	SIL (µg/m ³)	Exceedance
PM ₁₀	24-hour Exhaust	0.52	5.00	No
	24-hour Fugitive	6.65	10.40	No
	Annual Exhaust	0.02	1.00	No
	Annual Fugitive	0.70	2.08	No
PM _{2.5}	24-hour Exhaust	0.52	1.20	No
	24-hour Fugitive	1.60	2.50	No
	Annual Exhaust	0.02	0.13	No
	Annual Fugitive	0.17	0.63	No

Sources: RCI 2024l, RCI 2024s, with CEC staff analysis

PG&E Utility Switchyard

Operation and maintenance of the PG&E utility switchyard would be performed remotely by PG&E, which would minimize vehicle trips to and from the site during its operation, resulting in negligible emissions. Additionally, no diesel generators or other non-electric equipment that emit criteria air pollutants would be utilized.

PG&E Downstream Network Upgrades

Once constructed, 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 (RCI 2024z). Operation and maintenance of the downstream network upgrades would be performed by PG&E and therefore would result in minimal emissions from vehicle trips to and from the downstream upgrades during operation. No diesel generators or other nonelectric equipment would be used that result in emissions of criteria air pollutants.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

This section considers impacts that may arise from emissions other than criteria air pollutants, such as emissions that may lead to odors. Toxic air contaminants are addressed separately in **Section 5.10, Public Health**.

Construction– *Less Than Significant Impact*

Based on the analysis below, construction of the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Minor odor sources during construction activities include diesel exhaust from heavy-duty equipment. Odors from construction activities within the site would be temporary in nature and dissipate as a function of distance. Accordingly, construction of these project components is not expected to involve sources of emissions that may lead to odor impacts or impacts of emissions other than those pollutants identified elsewhere in this analysis.

Fugitive dust emissions can create a nuisance and adverse effects. To ensure that fugitive dust emissions would not occur at levels that could adversely affect a substantial number of people, the project would comply with SJVAPCD Rule 9521 for limiting visible emissions from fugitive dust, including unpaved roads, and would be subject to prohibitions on creating nuisances in the California Health & Safety Code. Therefore, the construction of these project components would not result in other emissions, such as odors or dust, that could adversely affect a substantial number of people.

PG&E Utility Switchyard

Minor odor sources during construction activities at the PG&E utility switchyard include diesel exhaust from heavy-duty equipment. Odors from construction activities within the site would be temporary in nature and dissipate as a function of distance. Accordingly, construction of the switchyard is not expected to involve sources of emissions that may lead to odor impacts or impacts of emissions other than those pollutants identified elsewhere in this analysis.

Fugitive dust emissions can create a nuisance and adverse effects. To ensure that fugitive dust emissions would not occur at levels that could adversely affect a substantial number of people, the project would comply with SJVAPCD Rule 8021 for limiting visible emissions from fugitive dust, including unpaved roads, and would be subject to prohibitions on creating nuisances in the California Health & Safety Code.

PG&E Downstream Network Upgrades

The downstream network upgrades installation would be completed in approximately 12 to 16 weeks; at any one location the construction would take between 2 and 3 weeks (RCI 2024z). Impacts from construction activities within the linears of the downstream network upgrades would be temporary in nature and dissipate as a function of distance. Construction of the network upgrades is not expected to involve sources of emissions

that may lead to odor impacts or impacts of emissions other than those pollutants identified elsewhere in this analysis.

Operation— *Less Than Significant Impact*

Based on the analysis below, operation of the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

After construction concludes and routine operation commences, the solar PV facility and BESS energy facility would have no notable sources of emissions other than from mobile sources and the LPG emergency engines described elsewhere in this analysis.

Nuisance impacts would not be likely to occur during operation or maintenance activities. The project would not result in odors or other emissions that could adversely affect a substantial number of people.

PG&E Utility Switchyard

Operation of the PG&E utility switchyard would be considered in the cumulative impact analysis of the overall project impacts. Nuisance impacts would not be likely to occur during operation or maintenance activities. Operation of the switchyard would not result in impacts or other emissions that could adversely affect a substantial number of people.

PG&E Downstream Network Upgrades

Once constructed, 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 (RCI 2024z). Operation and maintenance of the downstream network upgrades would be performed by PG&E and therefore would result in minimal emissions from vehicle trips to and from the downstream upgrades during operation. No diesel generators or other nonelectric equipment would be used that result in emissions of criteria air pollutants.

5.1.2.3 Cumulative Impacts

Construction and Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, the project would not result in a cumulatively considerable net increase of any criteria air pollutant, and the project's potential to contribute to the

cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The conclusion for cumulative impacts to criteria air pollutant concentrations relies on the quantified emissions and the modeled concentrations presented above. Each of the projects in the cumulative project scenario could result in some level of contribution to the region's adverse air quality conditions, although the individual contribution of each project would be minimized if each project is consistent with air quality management planning efforts and in compliance with applicable local air district rules and regulations, as described with the regulatory setting.

Under environmental checklist criterion "b," staff concludes that the project's criteria pollutant emissions would not occur at rates that could be cumulatively significant. Aside from NO_x and CO during construction, the project's emissions of criteria pollutants and precursors would not exceed any threshold of significance. With the implementation of COCs **AQ-SC1** through **AQ-SC6**, the project construction would not result in a cumulatively significant impact.

Under environmental checklist criterion "c," staff presents the results of the staff's independent air quality impact analysis for all criteria pollutants during construction and operation. The total air quality impacts include background concentrations as a means of capturing the effects of existing sources in the cumulative conditions.

The local cumulative PM₁₀ and PM_{2.5} concentrations that occur above the most-stringent standards are dominated by the combined effects of existing, background stationary and mobile sources. Because the overall cumulative impact to PM₁₀ and PM_{2.5} exceed the standards, the proposed project would contribute to a significant cumulative impact. However, based on the proposed project's individual impact being below the thresholds of the PM₁₀ and PM_{2.5} SILs for all sensitive receptor locations, the project's incremental contribution to the cumulative impact would not be cumulatively considerable.

PG&E Utility Switchyard and Downstream Network Upgrades

Under environmental checklist criterion "b," staff concludes that the criteria pollutant emissions from construction and operation of the PG&E utility switchyard and downstream network upgrades would not occur at rates that could be cumulatively significant. Under environmental checklist criterion "c," staff concludes that construction and operation of the PG&E utility switchyard and downstream network upgrades would not expose sensitive receptors to substantial pollutant concentrations.

5.1.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.1-17 includes staff's determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed project would be consistent with all applicable LORS. The subsection below, "5.1.5 Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.1-17 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
Federal	
Clean Air Act	
40 Code of Federal Regulations (CFR) Part 51, Nonattainment NSR Program	Yes. New source review requirements are implemented through SJVAPCD rules and regulations. Conditions of Certification for the emergency engines AQ-1 through AQ-18 would ensure local APCD permit conditions are satisfied.
40 CFR Part 60, NSPS Subpart JJJJ	Yes. Applies to proposed project's propane-fueled stationary emergency generator engines. Project owner would purchase certified engines and operate it according to manufacturer's instructions. See Conditions of Certification AQ-1 and AQ-18 .
State	
California Health and Safety Code	
Section 41700, Nuisance Provisions	Yes. Applies to all of the proposed project's emitting activities and sources. To avoid the potential for injury, detriment, nuisance, or annoyance this analysis includes Condition of Certification AQ-SC1 to AQ-SC4 for minimizing visible dust during construction.
U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program	Yes. Mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. Condition of Certification AQ-SC5 would ensure construction equipment meets the latest tier.
CARB In-Use Off-Road Diesel Fueled Fleets Regulation	Yes. The regulations for in-use off-road diesel equipment are designed to reduce NOx and DPM. Condition of Certification AQ-SC5 would ensure construction equipment meets state-wide standards.
Local	
Fresno County General Plan	
Air Quality Element: Policy OS-G.13 through OS-G.16	Yes. Includes policies applicable to Fresno County coordination with air quality resource agencies and County land use decisions to

TABLE 5.1-17 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
	reduce emissions from new developments (Fresno 2024). This analysis includes mitigation and Conditions of Certification to reduce air quality impacts to below levels of significance.
San Joaquin Valley APCD	
Regulation VII (Fugitive PM10 Prohibitions)	<p>Yes. Contains rules developed pursuant to U.S. EPA guidance for “serious” PM10 nonattainment areas. Rules included under this regulation limit fugitive PM10 emissions from the following sources: construction, demolition, excavation, extraction, and other earth moving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources. Table 5.1-6 contains control measures that the Applicants would implement during project construction activities pursuant to Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. Conditions of Certification AQ-SC1 to AQ-SC4 would ensure compliance with Rule 8021.</p> <p>Project activities, including earth-moving, construction, demolition, bulk storage, and conditions resulting in wind erosion, are subject to opacity and visible dust emissions standards and must apply reasonably available control measures (RACMs). See Conditions of Certification AQ-SC1 to AQ-SC6.</p>
Rule 2010, Permits Required	Yes. Applies to proposed project’s propane-fueled stationary emergency generator engine. See Condition of Certification AQ-2 .
Rule 2201, New Source Review	Yes. This analysis includes Conditions of Certification AQ-1, AQ-3, AQ-4, AQ-9, AQ-10, AQ-11, and AQ-14 .
Rule 4101, Visibility	Yes. Applies to proposed project’s propane-fueled stationary emergency generator engine. See Condition of Certification AQ-7 .
Rule 4102, Nuisance	Yes. This rule prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public. See Conditions of Certification AQ-5 and AQ-14 .
Rule 4201, Particulate Matter Concentration	Yes. This rule limits particulate matter emissions from any single source operation to 0.1 g/dscf, which is equivalent to a PM10 emission factor of

TABLE 5.1-17 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
	0.4 g-PM10/bhp-hr. See Condition of Certification AQ-6 .
Rule 4701, Internal Combustion Engines	Yes. This rule limits the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. See Condition of Certification AQ-7 .
Rule 4702, Internal Combustion Engines	Yes. The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), and sulfur oxides (SOx) from internal combustion engines. See Conditions of Certification AQ-8, AQ-12, AQ-14 through AQ-18 .
Rule 4801, Sulfur Compounds	Yes. This rule requires that sulfur compound emissions (as SO ₂) shall not exceed 0.2% by volume. See Condition of Certification AQ-10 .
Rule 9510, Indirect Source Review	Yes. This rule requires large development projects to reduce exhaust emissions from construction equipment by 20 percent for NOx and 45 percent for PM10 compared to the statewide average, or demonstrate use of a clean fleet (such as US EPA Tier 4 equipment). See Conditions of Certification AQ-SC1 to AQ-SC6 .

5.1.4 Conclusions and Recommendations

As discussed above, with implementation of conditions of certification, the project would have a less than significant impact related to air quality and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.1.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Conditions proposed in the emergency engine section of these conditions are to ensure that the project complies with all applicable local, state, and federal regulations. If adopted, these additional conditions of certification would be consistent with SJVAPCD LORS requirements. The conditions of certification apply to each of the three identical emergency engines and are numbered **AQ-1** through **AQ-18**.

Impacts associated with the PG&E Utility Switchyard and Downstream Network Upgrades to be considered for permitting by CPUC would be further reduced with the inclusion of MMs.

5.1.5 Proposed Conditions of Certification

AQ-SC1 Air Quality Construction Mitigation Manager (AQCM). The project owner shall designate and retain an on-site AQCM who shall be responsible for directing

and documenting compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMMD may delegate responsibilities to one or more AQCMMD Delegates. The AQCMMD and AQCMMD Delegates shall have full access to all areas of construction on the project site and linear facilities and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMMD and AQCMMD Delegates may have other responsibilities in addition to those described in this condition. The AQCMMD shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMMD and all AQCMMD Delegates.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP). The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5**.

Verification: At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.

AQ-SC3 Construction Fugitive Dust Control. The AQCMMD shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the AQCMP mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site. Any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

Report monthly on the following fugitive dust mitigation measures that shall be included in the AQCMP required by **AQ-SC2**:

- a. The main access roads through the facility will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.
- b. All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as

- or more efficient for fugitive dust control than CARB approved soil stabilizers, and that shall not increase any other environmental impacts, including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of COC **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.
- c. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
 - d. Visible speed limit signs shall be posted at the construction site entrances.
 - e. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
 - f. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
 - g. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
 - h. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
 - i. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.
 - j. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
 - k. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.

- l. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or shall be treated with appropriate dust suppressant compounds.
- m. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.
- n. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The AQCM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:

- A. A summary of all actions taken to maintain compliance with this condition;
- B. Copies of any complaints filed with the District in relation to project construction; and
- C. Any other documentation deemed necessary by the CPM and AQCM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement. The AQCM or an AQCM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCM shall include a section detailing the additional mitigation measures described in the verification below and how they will be implemented to meet these fugitive dust control performance standards.

The AQCM or Delegate shall implement the following procedures for additional mitigation measures in the event that visible dust plumes as defined above are observed:

- Step 1: The AQCM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.
- Step 2: The AQCM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.

- Step 3: The AQCM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The project owner may appeal to the CPM any directive from the AQCM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCM shall provide the CPM a Monthly Compliance Report to include:

- A. A summary of all actions taken to maintain compliance with this condition;
- B. Copies of any complaints filed with the District in relation to project construction; and
- C. Any other documentation deemed necessary by the CPM and AQCM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC5 Diesel-Fueled Engine Control. The AQCM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCM mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCM mitigation measures shall require prior and CPM notification and approval.

The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCM) required by

AQ-SC2:

- a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCM showing that the engine meets the conditions set forth herein.
- b. All construction diesel engines with a rating of 25 hp or higher shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 Final engine is not available for any off-road equipment larger than 50 hp, a Tier 4 Interim or Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by engine manufacturers or the on-site AQCM that the use of such devices is not practical for specific engine types. For purposes of this

- condition, the use of such devices is “not practical” for the following, as well as other, reasons.
1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question; or
 2. The construction equipment is intended to be on site for 10 days or less; or
 3. The CPM may grant relief from this requirement if the AQCM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.
- c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item “b” occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:
1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
 2. The retrofit control device is causing or is reasonably expected to cause engine damage.
 3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
 4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.
- d. All heavy earth-moving equipment and heavy-duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer’s specifications.
- e. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.
- f. Construction equipment will employ zero-emission or hybrid powertrains and electric motors when feasible.

Verification: The AQCM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions:

- A. A summary of all actions taken to control diesel construction related emissions;
- B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and
- C. Any other documentation deemed necessary by the CPM, and the AQCM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall enter into a voluntary emissions reduction agreement (VERA) with the SJVAPCD to offset the NOx emissions above the 10 tons per year threshold. The VERA is a mechanism for the project owner to fund programs to reduce NOx emissions in the SJVAB. The project owner shall coordinate with SJVAPCD to ensure VERA funds are used for programs near the project site to the extent feasible. The VERA shall be submitted and approved by the CEC CPM and SJVAPCD prior to beginning construction activities.

If available and as feasible, electric equipment could be incorporated into the off-road equipment fleet to reduce NOx emissions that must be offset with the required VERA. In order to reduce the NOx emissions that must be offset with the required VERA, the project owner shall provide commitment to available electric equipment to the CEC and the SJVAPCD prior to beginning construction activities and quantify the emissions reductions from the electric equipment. Documentation of the equipment operating on-site shall be maintained on-site at all times during construction activities.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit to the CPM for approval the VERA between the project owner and SJVAPCD.

COC applicable to each of the three identical emergency engines.

Equipment Description: 230.12 BHP (Intermittent) PSI Model 8.8I Rich-Burn LPG/Propane-Fired Emergency Standby IC Engine (Or CPM and District Approved Equivalent) With Non-Selective Catalytic Reduction (NSCR) Powering an Electrical Generator.

AQ-1 The project owner shall obtain written CPM and District approval for the use of any equivalent equipment not specifically approved by these conditions of certification herein. Approval of the equivalent equipment shall be made only after the CPM's and District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment.

Verification: The project owner shall submit the emergency engine specifications to the CPM at least 30 days prior to purchasing the engine for review and approval.

AQ-2 The project owner's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters.

Verification: The project owner shall submit the emergency engine specifications to the CPM at least 30 days prior to purchasing the engine for review and approval.

AQ-3 Alternate equipment shall be of the same class and category of source as the equipment authorized by these conditions of certification herein.

Verification: The project owner shall submit the emergency engine specifications to the CPM at least 30 days prior to purchasing the engine for review and approval.

AQ-4 No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment.

Verification: The project owner shall submit the emergency engine specifications to the CPM at least 30 days prior to purchasing the engine for review and approval.

AQ-5 No air contaminant shall be released into the atmosphere which causes a public nuisance.

Verification: The right of entry described in the California Health and Safety Code (CH&SC) Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-6 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-7 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-8 This engine shall be equipped with an operational non-resettable elapsed time meter or other Air Pollution Control Officer (APCO) and CPM approved alternative.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-9 This IC engine shall be equipped with a three-way catalyst.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-10 This IC engine shall be fired on LPG/propane gas only.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-11 Emissions from this IC engine shall not exceed any of the following limits: 0.014 g-NO_x/bhp-hr, 0.054 g-SO_x/bhp-hr, 0.064 g-PM₁₀/bhp-hr, 0.97 g-CO/bhp-hr, or 0.021 g-VOC/bhp-hr.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-12 This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-13 During periods of operation for maintenance, testing, and required regulatory purposes, the project owner shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier).

Verification: The project owner shall submit a quarterly compliance report to the CPM. In this report, the project owner shall indicate how this condition is being implemented. A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-14 This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-15 An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the project owner.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-16 This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract.

Verification: A negative declaration stating the engine was not used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract operation shall be included in the quarterly operation reports.

AQ-17 The project owner shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-18 All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District and CPM inspection upon request. For units at unstaffed sites or operated remotely, records may be maintained and retained at a CPM and District-approved off-site location.

Verification: The right of entry described in CH&SC Section 41510, Division 26, shall apply at all times. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

5.1.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). The measures are necessary to control fugitive dust during construction.

MM AQ-1 Fugitive Dust Control.

- Applying water to disturbed areas and to storage stockpiles.
- 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.

5.1.7 References

- CARB 2022 – California Air Resources Board (CARB). Area Designations for State Ambient Air Quality Standards PM₁₀. Accessed on December 8, 2024. Available online at: https://ww2.arb.ca.gov/sites/default/files/2023-02/State_2022_PM10.pdf
- CARB 2024a – California Air Resources Board (CARB). California Air Quality Data Statistics (iADAM). Accessed on December 19, 2024. Available online at: <https://www.arb.ca.gov/adam/topfour/topfour1.php>
- CARB 2024b – California Air Resources Board (CARB). California Ambient Air Quality Standards. Accessed on December 19, 2024. Available online at: <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>
- CARB 2024c – California Air Resources Board (CARB). California State Implementation Plans. Accessed on December 19, 2024. Available online at: <https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/about>

- CEC 2025b – California Energy Commission (TN 261572). Report of Conversation with San Joaquin Valley Air Pollution Control District- Draft Authority to Construct. Dated February 6, 2025. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Fresno 2024 – Fresno County General Plan Policy Document. Dated February 2024. Accessed in January 2025. Available online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- RCI 2023dd – Rincon Consultants, Inc. (TN 252983). Section 5-7 Air Quality. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024k – Rincon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2. Dated March 15, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024l – Rincon Consultants, Inc. (TN 255906). CEC Data Request Response Set 3. Dated April 24, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024s – Rincon Consultants, Inc. (TN 255913). Data Response Set 3 Appendix B and Appendix C. Dated April 24, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Rincon Consultants, Inc. (TN 256296). Data Request Response Set 4. Dated May 10, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ee – Rincon Consultants, Inc. (TN 259509). Updated Darden Clean Energy Project Description. Dated October 9, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ll – Rincon Consultants, Inc. (TN 253031-1 through TN 253031-4). Appendix N Air Quality and Greenhouse Gas Emissions Study. Dated November 7, 2023. Available online at: [https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docket number=23-OPT-02](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02)
- RCI 2024z – Rincon Consultants, Inc. (TN 258571). CEC Data Request Response Set 6. Dated August 20, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- SJVAPCD 2000 – San Joaquin Valley Air Pollution Control District (SJVAPCD). Environmental Review Guidelines, August 2000. Accessed on December 20, 2024. Available online at: https://ww2.valleyair.org/media/k2yhjmuk/erg-adopted-_august-2000_.pdf
- SJVAPCD 2004 – San Joaquin Valley Air Pollution Control District (SJVAPCD). Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving

- Activities. Adopted November 15, 2001. Amended August 19, 2004. Accessed in December 2024. Available online at: <https://www.valleyair.org/rules/currnt/rules/r8021.pdf>
- SJVAPCD 2015a – San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. Accessed on December 20, 2024. Available online at: <https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf>
- SJVAPCD 2015b – San Joaquin Valley Air Pollution Control District (SJVAPCD). Air Quality Thresholds of Significance-Criteria Pollutants. Accessed on December 20, 2024. Available online at: <https://ww2.valleyair.org/media/m2ecyxiw/1-cms-format-ceqa-air-quality-thresholds-of-significance-criteria-pollutants.pdf>
- SJVAPCD 2024a – San Joaquin Valley Air Pollution Control District (SJVAPCD). 2024 Plan for the 2012 PM_{2.5} Standard. Accessed on July 11, 2024. Available online at: <https://ww2.valleyair.org/rules-and-planning/air-quality-plans/particulate-matter-plans/2024-plan-for-the-2012-pm25-standard/>
- SJVAPCD 2024b – San Joaquin Valley Air Pollution Control District (SJVAPCD). APR 1925 Policy for District Rule 2201 AAQA Modeling. Accessed on January 2, 2025. Available online at: <https://ww2.valleyair.org/media/341fy4sn/apr-1925-rule-2201-aaqa-modeling-may-2024.pdf>
- U.S. EPA 2023 – United States Environmental Protection Agency (U.S. EPA). Outdoor Air Quality Data, Monitor Values Report. Accessed on September 20, 2023. Available online at: <https://www.epa.gov/outdoor-air-quality-data/monitor-values-report>
- U.S. EPA 2024a – United States Environmental Protection Agency (U.S. EPA). NAAQS Table. Accessed on September 30, 2024. Available online at: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>
- U.S. EPA 2024b – United States Environmental Protection Agency (U.S. EPA). EPA Region 9 Air Quality Maps and Geographic Information. Accessed on August 30, 2024. Available online at: <https://www3.epa.gov/region9/air/maps/index.html>
- U.S. EPA 2024c – United States Environmental Protection Agency (U.S. EPA). Reconsideration of the National Ambient Air Quality Standards for Particulate Matter. Accessed on September 20, 2024. Available online at: <https://www.federalregister.gov/documents/2024/03/06/2024-02637/reconsideration-of-the-national-ambient-air-quality-standards-for-particulate-matter>
- U.S. EPA 2024d – United States Environmental Protection Agency (U.S. EPA). Air Data: Air Quality Data Collected at Outdoor Monitors Across the US. Accessed on December 30, 2024. Available online at: <https://www.epa.gov/outdoor-air-quality-data>

5.2 Biological Resources

5.2.1 Environmental Setting

Existing Conditions

The project would be located on approximately 9,500 acres in unincorporated Fresno County, within the San Joaquin Valley. For the purposes of analysis, the project site is defined as all areas subject to permanent and temporary impacts. This includes both jurisdictional and non-jurisdictional components. The jurisdictional components include, the solar facility, battery energy storage system (BESS), step-up substation, and generation-intertie (gen-tie) line, and associated facilities while the non-jurisdictional components include the Pacific Gas and Electric Company (PG&E) utility switchyard and the PG&E downstream network upgrades. The PG&E downstream network upgrades are not included in the 9,500 acres. The project area can be broadly defined as all areas surrounding the project site that would not be subject to development but would include adjacent habitat outside the site boundaries. The project vicinity includes all areas within 10 miles of the proposed project site and beyond.

The PG&E utility switchyard would be located on lands that would be deeded to PG&E upon completion and inspection, to be owned and operated by PG&E as a public utility. The PG&E downstream network upgrades, identified by California Independent System Operator as necessary to accommodate the project, would include three alternative scenarios for fiber line communications (Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line) within existing PG&E electric distribution and transmission line corridors, as well as proposed upgrades at four existing PG&E substations, the Cantua Substation, Los Banos Substation, Midway Substation, and Gates Substation. The Gates Substation and Cantua Substation are located in Fresno County, California, the Los Banos Substation is located in Merced County, California, and the Midway Substation is located in Kern County (RCI 2024cc).

Regional Setting and Background

The project site is located within the San Joaquin Valley which is bounded by the Sacramento – San Joaquin River Delta to the north, the Diablo Mountain Range to the west, the Sierra Nevada Mountains to the east, and the Tehachapi Range to the south (RCI 2023w). The rivers and streams that flowed from the Sierra Nevada mountains meandered through broad floodplains in the San Joaquin Valley, however due to the region's history of urbanization and agriculture, these have been restricted to narrower belts along the rivers and streams or otherwise modified for flood control (Fresno 2024, p. 2-124).

The San Joaquin Valley is primarily characterized by vegetation that mostly consists of annual/ruderal grassland, pasture, cropland, valley-foothill riparian, vernal pool, alkali scrub, and orchard-vineyard (RCI 2023w). More broadly, although primarily situated

within the largely agricultural area of the San Joaquin Valley, the project site is located within 10 miles of the Mendota Wildlife Area to the north, the city of Fresno to the east, the Lemoore Naval Air Station to the south, and the Ciervo Hills, Big Blue Hills, and Alcalde Hills (of the Diablo Range) to the west. The climate is generally hot in the summer, with an average daily high over 90°F from June to September, rarely below 29°F in the winter (WeatherSpark 2025).

Local Setting

The project site is located on privately owned lands approximately 3 miles southeast of the community of Cantua Creek, 3 miles northwest of the community of Five Points, 20 miles north of Coalinga and 25 miles southwest of Fresno. Interstate 5 (I-5) crosses the gen-tie line and separates the solar facility and other jurisdictional components from the PG&E utility switchyard (see **Figure 3-1** in **Section 3, Project Description**). The project site would be bordered by West Stroud Avenue to the north, S. Butte Avenue to the east, Mt. Whitney Avenue to the south, with the 500 kV generation intertie line (gen-tie) crossing Interstate 5 to the west and ending at the proposed PG&E utility switchyard, along an unmarked road immediately west of South Derrick Avenue. The California Aqueduct bisects the gen-tie parcels, running generally north to south, and the gen-tie line would also span Cantua Creek.

The Fresno County General Plan designates the project area primarily for agricultural use, with specific land use classifications including Agriculture, Westside Rangeland and the Westside Freeway Corridor Overlay (RCI 2023nn). The zoning for the site is designated as "Exclusive Agricultural" (RCI 2023nn). Surrounding land uses consist of agriculture with a few small scattered rural residential areas and small solar facilities (RCI 2023w)

Elevation in the project area increases from approximately 186 feet above mean sea level (AMSL) on the eastern side to approximately 644 feet AMSL to the west and southwest (near the PG&E utility switchyard). The foothills of the Diablo Range (a portion of California's Coast Ranges) form the western boundary of Fresno County. The Diablo Range rises more than 3,000 feet above the San Joaquin Valley.

For the PG&E downstream network upgrades, land use in the vicinity of all three alternative fiber line scenarios and substations includes agriculture, open space with scattered shrubs, grassland, drainage features, highways, and limited developed uses (i.e., rural residences, public roads, and solar farms) (RCI 2024cc). Topography within the locations for the PG&E downstream network upgrades, which would be located in the foothills of the Diablo range, is relatively flat, with elevations ranging from approximately 280 to 780 feet AMSL elevation and generally increases from east to the west towards the Diablo Range.

Vegetation and Landforms

The project area is located in the Great Central Valley Region and further categorized as the San Joaquin Valley geographic subdivision by the Jepson geographic system as included in the Jepson Manual (Jepson 2025). This region is primarily agricultural, but it also supports a variety of vegetation communities, typically in isolated patches and along the margins of the San Joaquin Valley, that include grasslands, marshes, vernal pools, alkali scrub, and riparian woodlands (Fresno County 2023). The dominant vegetation communities that occur in the project area reflect the past and existing agricultural land uses.

Vegetation communities are typically classified in accordance with the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) or A Manual of California Vegetation (Sawyer et al. 2009). Vegetation communities would typically be categorized to the alliance level, when applicable, consistent with A Manual of California Vegetation, 2nd Edition (MCV) (Sawyer et al., 2009) and updated in the current online edition (CNPS 2025). Descriptions of the vegetation communities are presented below for the jurisdictional and non-jurisdictional components of the project.

Vegetation Communities

There are no naturally occurring vegetation communities mapped in the project area, which includes the jurisdictional components of the project site and related facilities as well as the PG&E utility switchyard (RCI 2023rr). Land cover primarily consists of retired agricultural lands that have been sporadically farmed over the past decade. These lands are seasonally or annually disked when not in cultivation and include associated features such as dirt roads, field and road shoulders, as well as man-made basins, irrigation ditches, and berms.

The jurisdictional components of the project site, as well as the PG&E utility switchyard, are located within an agricultural area characterized by active and seasonally managed non-active fields (RCI 2023w). These fields are tilled or disked several times a year, alternating between bare ground and varying levels of invasive weed growth between tilling/disking for weed control (RCI 2024z). This land cover is primarily categorized as "retired and managed agricultural land". Furthermore, the site is subject to a non-irrigation covenant that prohibits both current and future use of irrigated agriculture (RCI 2024z). Surrounding properties include retired and active agricultural lands, with compacted dirt and paved roads separating the various land cover types. During 2023, limited non-irrigated farming occurred in parts of the project site due to the unusually wet winter of 2022/2023 (RCI 2023rr). Active row crops documented in these areas included tomato and onion (RCI 2024z).

Land cover types primarily identified by the applicant include tilled/ barren lands identified as non-active agricultural and active agricultural lands (RCI 2024z). Surveys conducted by the applicant identified the following agricultural and other land cover types in the project area for the solar field, BESS, substation, and other associated

components: tilled/barren, row crops (tomato and garlic), pistachio and almond orchards corn field, and cover crops. In the project area for the gen-tie line, the applicant identified the following agricultural and other land cover types: row crops (tomato and garlic), pistachio orchard, eucalyptus grove, corn field, tilled/barren, and in planting preparation. Some of these areas overlap with the areas identified for the rest of the project site. In addition, the applicant identified developed areas, unnamed roads and tracks as well as open water and ruderal areas (RCI 2023w). The PG&E utility switchyard would be located in area that consists of an almond orchard and open bare ground with grassland identified along the far western boundary outside of the area of impact.

Most non-active agriculture parcels were overgrown with mustard (*Brassica nigra*) before being disked in May 2023 (RCI 2023w). Plant species observed during surveys included black mustard (*Brassica nigra*), bread wheat (*Triticum aestivum*), Great Valley phacelia (*Phacelia ciliata*), and field bindweed (*Convolvulus arvensis*). Existing trees are generally limited to windrows or areas near structures and include red gum eucalyptus (*Eucalyptus camaldulensis*), arroyo willow (*Salix lasiolepis*), Fremont cottonwood (*Populus fremontii*), as well as agricultural trees such as olive, almond, and various fruit trees (RCI 2023rr). Additional details on land cover are documented in CEC Data Response Set 4 in Table 2 and Appendix E (RCI 2024u) and mapped in the application as Figure 5.2-5 (RCI 2024u) as well as in Appendix A to CEC Data Request Response 6, as REV 1 DR BIO-1 Updated Land Cover Maps (RCI 2024z).

The PG&E downstream network upgrades would be located in vegetation communities similar to those at the main project site for the jurisdictional components and PG&E utility switchyard. These upgrades, including three alternative fiber line scenarios and four substations, are described in CEC Data Response Set 6 – Appendix D REV 1 DR TSD-1 BRA Vol 1 (RCI 2024cc). The three alternative fiber line study areas are primarily located in active and non-active agricultural fields interspersed with saltbush scrub, annual grasslands, developed areas, and bare ground. Highways and limited developed uses, such as rural residences and public roads, are also present within these areas (RCI 2024cc). The PG&E substation study areas are predominantly developed with existing PG&E facilities, although some agricultural land cover is present in the proposed work and study areas, particularly at the Cantua Substation. The Manning Substation is not yet built.

Non-Native Invasive / Noxious Weeds

Invasive or noxious weeds are plants that can directly or indirectly cause problems for agriculture, natural resources, wildlife, recreation, navigation, public health, or the environment. The California Department of Food and Agriculture (CDFA) (CDFA 2025) and the California Invasive Plant Council (Cal-IPC) (Cal-IPC 2024) have rated invasive or noxious weeds in California based on the threat these species pose to the natural landscape. Invasive plant species designated by the California Invasive Plant Council (CAL-IPC) as High, Moderate or Limited were detected in the project area.

A total of three species of noxious weeds were documented in the project area. The most common invasive plant species is black mustard (Cal-IPC ranked “moderate”). In addition, smallflower tamarisk (*Tamarix parviflora*) (Cal-IPC ranked “high” and Russian thistle (Cal-IPC ranked “limited”) were observed during the jurisdictional delineation surveys. The site is regularly disked to control invasive weeds such as black mustard and Russian thistle (RCI 2024u).

Aquatic Resources

The applicant conducted a jurisdictional delineation of on-site aquatic resources following protocols which included federal and state methods and guidelines on August 21-22, 2023 (RCI 2023rr). The survey area included all jurisdictional project components as well as the PG&E utility switchyard plus a 250-foot buffer (RCI 2023rr). The project is within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board (RWQCB) (Region 5) (RCI 2023rr). Surveys were conducted by car and on foot and documented aquatic resources as well as verified previously mapped resources identified in the NWI, the December 2022 [2022] reconnaissance surveys, and during pre-field investigations (RCI 2023rr).

The survey focused on a delineation of potentially jurisdictional aquatic features, including wetlands and riparian areas. The applicant mapped drainage features, riparian habitat, and wetland sample points using a Trimble® GeoXT GPS unit and recent aerial photography (RCI 2023rr). The surveys included mapping of both jurisdictional and non-jurisdictional aquatic features. These waters included jurisdictional features such as the California Aqueduct, Cantua Creek, ephemeral streams and their impoundments in the foothills on the west side near the PG&E utility switchyard as well as non-jurisdictional features such as man-made irrigation ditches, man-made canals, and man-made irrigation basins (RCI 2023rr).

The preliminary jurisdictional delineation and analysis of the project site indicated no federally jurisdictional Waters of the US are present (RCI 2023oo). There would be no discharges to waters of the state and discharges to agricultural ditches subject to the Porter Cologne Water Quality Control Act are not proposed as part of the project. In addition, there are no jurisdictional features mapped on the project site that would be impacted by the project and subject to regulation by CDFW. The project would avoid activities within or near the California Aqueduct or Cantua Creek, as well as within the ephemeral streams and their impoundments in the foothills on the west side near the PG&E utility switchyard and the project has been designed to avoid all other potentially jurisdictional aquatic resources (RCI 2023rr).

The project site for the jurisdictional component and PG&E utility switchyard is located in the U.S. Geologic Service (USGS) Hydrologic Unit Code (HUC) Arroyo Hondo-Fresno Slough Watershed (HUC-12 1803000908) and the Cantua Creek-Fresno Slough Watershed (HUC-12 1803000906). The Arroyo Hondo-Fresno Slough Watershed drains an area of approximately 17,303 acres, and the Cantua Creek-Fresno Slough Watershed drains an area of approximately 24,762 acres. The California Aqueduct bisects the

proposed gen-tie line corridor approximately 3 miles west of the solar facility, with Cantua Creek paralleling the corridor 0.25 to 0.5 miles to the south. The gen-tie line crosses the California Aqueduct, an aquatic resource that is potentially jurisdictional to the USACE, RWQCB, and CDFW, as it is a relatively permanent stream providing habitat to animals (RCI 2023rr).

Cantua Creek is the only natural waterway within the project site and its surrounding buffers. Cantua Creek, an intermittent creek, flows east-northeast, becoming channelized near South San Mateo Avenue before terminating east of the aqueduct. This creek is identified as a dashed “blue-line creek” in the National Hydrography Dataset (NHD) (USGS 2023) and as R4SBC, “riverine intermittent streambed seasonally flooded”, in the USFWS National Wetlands Inventory (NWI) (NWI 2023a).

The portion closest to the gen-tie line corridor lies within two parcels immediately west of the California Aqueduct. This intermittent creek originates in the hills west of the project site and flows east-northeast. Near South San Mateo Avenue, the creek becomes channelized between levees, continuing northeast and then east along the south side of West Harlan Avenue, approximately 200 feet south of the gen-tie line corridor. It terminates about 0.25 miles east of the California Aqueduct. This feature is potentially jurisdictional to CDFW and RWQCB but would be considered non-jurisdictional to the USACE as it is isolated; lacking connection to any traditionally navigable waters or their tributaries (RCI 2023w).

The survey area contains various aquatic features, including ephemeral swales, excavated palustrine wetlands, agricultural ditches, and basins, with most wetland features concentrated at the solar facility. Some mapped wetlands along the gen-tie line corridor have been altered or no longer exist. The step-up substation site lacks mapped wetlands, except for a single agricultural ditch, see Appendices Q-9 and Q-10 for more information (RCI 2023rr). There are four ephemeral swales (ES-1 to ES-4) formed in hillside draws and two impoundments, or stock ponds, (Impoundments 1 and 2) located within the 250-foot buffer on the west end of the project site near the PG&E utility switchyard. Throughout the project area and its adjacent 250-foot buffer, several man-made features have been mapped, including “palustrine” wetlands (freshwater wetlands not connected to a river or lake) that have been excavated. Additionally, three excavated basins on the east side of the solar facility are identified as intermittent riverine features (R4SBC) in the NWI, which are wetlands associated with flowing water.

Most of the onsite water flow is sheet flow from above-surface input and flows generally northeasterly as described in the applicant’s hydrology report for the project, constituting the site and related facilities as well as the PG&E utility switchyard (RCI 2023oo). Additional information can be found in the application materials in Section 2.3.5 and Section 4.3 of Appendix Q – Volume 1 Biological Resources Assessment (RCI 2023rr), Section 5.13 (RCI 2023oo), and Appendix Q-9 in the Aquatic Resources Delineation (RCI 2023rr).

For the PG&E downstream network upgrades, all 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).

The applicant's biologists documented several aquatic features, including ephemeral drainages, roadside ditches, and manmade canals and agricultural ditches which intersect the alternative fiber line study areas and two of the substation study areas, but would be avoided by proposed project activities (RCI 2024cc). A formal jurisdictional delineation was not conducted.

Seven intermittent riverine features mapped in the NWI were identified within the three alternative fiber line study areas and the Cantua Substation study area. These include Los Gatos Creek, Domingue Creek, Martinez Creek, Salt Creek, Cantua Creek, and two unnamed drainages (RCI 2024cc). A drainage ditch with ponded water was observed in the southeast corner of the property containing the Gates Substation, although it lies outside the Gates Substation study area.

The Coalinga Canal intersects the Scenario 2 Fiber Line study area as an underground pipeline and the Scenario 3 study area as a concrete-lined surface canal. Additional features mapped by the NWI and NHD intersect the fiber line study areas but were not field-assessed due to access restrictions. These features are depicted in Appendix A, Figure 4 (RCI 2024bb), with a summary provided in Table 4 (RCI 2024cc).

Designated Critical Habitat and Special Habitat Designations

The Federal Endangered Species Act (FESA) defines critical habitat as specific geographic areas that contain features essential to the conservation of an endangered or threatened species that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery. The USFWS and NMFS publish proposals to designate critical habitat in the Federal Register, a daily publication of the federal government. There is no critical habitat federally listed species on or within 10 miles of the project site, including the jurisdictional components or PG&E utility switchyard (USFWS ECOS 2023). USFWS-designated Critical Habitat does not occur within the alternative fiber line study areas or the substation study areas (RCI 2024cc).

Wildlife Corridors, Special Linkages, and Important Bird Areas

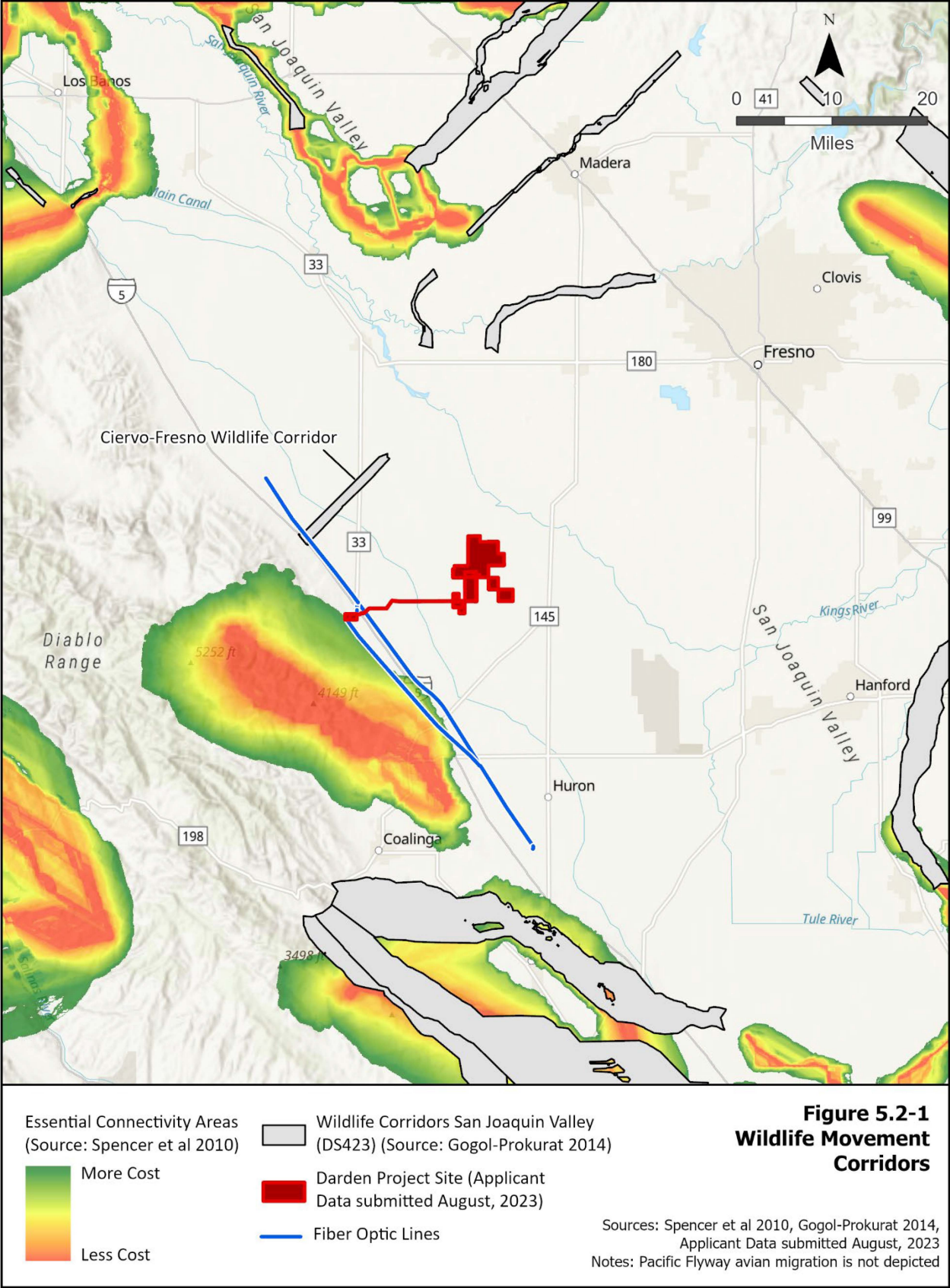
Wildlife corridors connect patches of habitat that allow for migration across the landscape as seasons change. These corridors contribute to population success through genetic exchange between populations, providing access to habitat for food, water, and mating, and provides for recolonization of habitat after disturbance, such as fire (The Wildlife Professional 2010). However, increasing habitat fragmentation has put these essential movements at risk. Habitat fragmentation occurs when development (e.g.

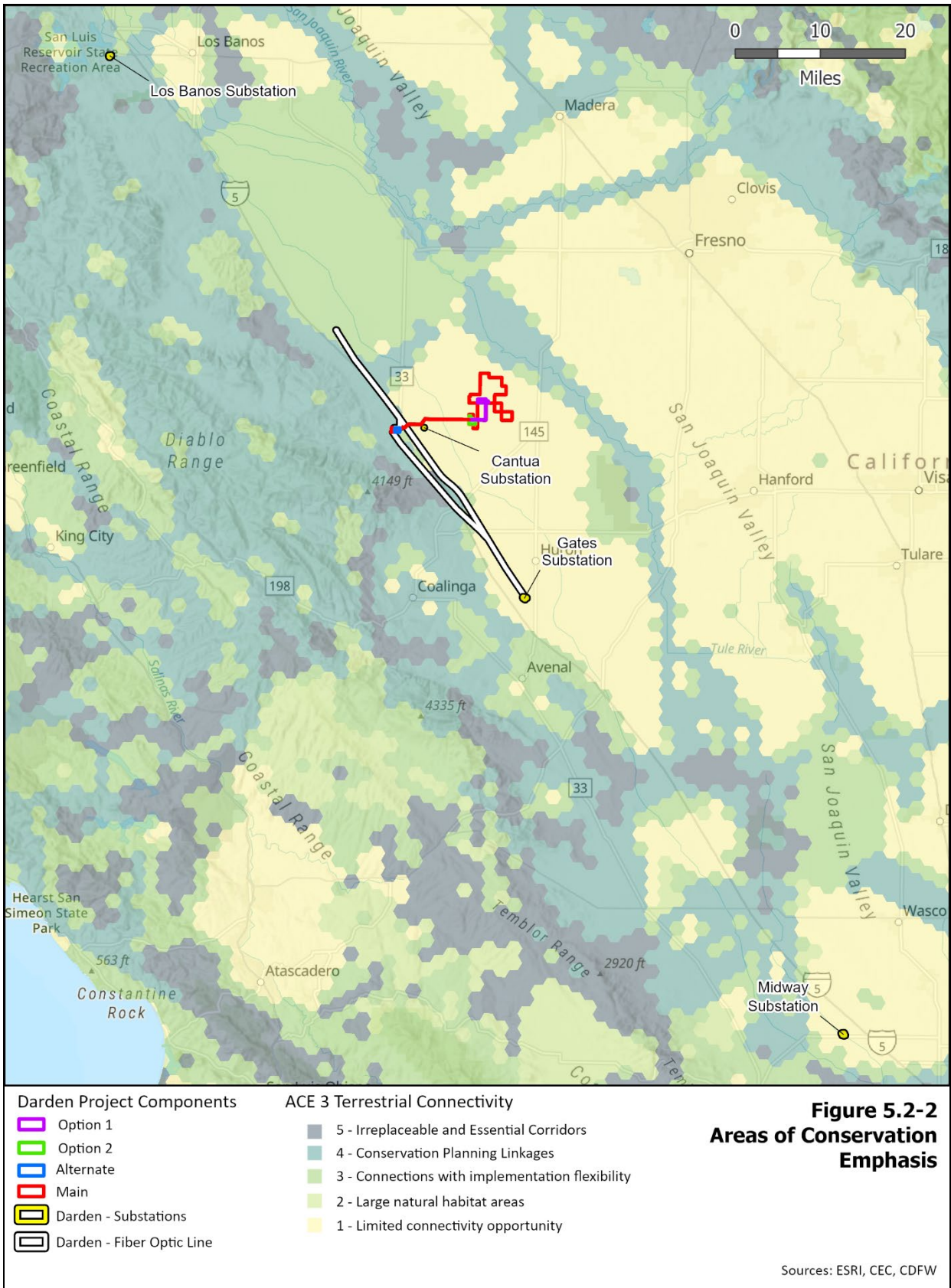
cities, roads, large renewable energy facilities) encroach on natural habitat or cut off migration routes, leaving wildlife trapped in small or isolated sections of their natural range. When wildlife populations are left with only islands or patches of habitat (e.g., national parks), they are at a greater risk of starvation, inbreeding, and death. Within Fresno County, there are wildlife corridors and connectivity among the Central Coast, Great Central Valley, and Sierra Nevada ecoregions ("ecoregions" are roughly consistent with the ecoregions as defined by Baldwin et al. 2012).

The California Essential Habitat Connectivity Project (Connectivity Project) was commissioned by the California Department of Transportation (Caltrans) and CDFW to create a statewide assessment of essential habitat connectivity to be used for conservation and infrastructure planning (Spencer et al., 2010). One of its goals was to create the Essential Connectivity Map, which depicts large, relatively natural habitat blocks that support native biodiversity (Natural Landscape Blocks) and areas essential for ecological connectivity between them (Essential Connectivity Areas). Another goal of the Connectivity Project was to highlight streams and rivers that provide additional routes for terrestrial and aquatic connectivity between Natural Landscape Blocks and Essential Connectivity Areas, referred to as Potential Riparian Connections (Spencer et al., 2010). These maps do not reflect the needs of particular species but are based on overall biological connectivity and ecological integrity. A California Essential Connectivity Area and Natural Landscape Block occurs adjacent to the western boundary of the project site, extending from the eastern edge of Panoche Hills to the west (RCI 2023w). The CDFW BIOS website, also depicted in **Figure 5.2-1**, illustrates a corridor north of the proposed project site (Gogol-Prokurat 2014).

The CDFW BIOS website (Gogol-Prokurat 2014), also depicted in **Figure 5.2-1**, illustrates a corridor north of the proposed project site, which reports in terms of "cost", whereas "cost" is generally defined as cost of ecological movement. As shown in **Figure 5.2-1**, a good way to think of Essential Connectivity Areas is as "paths of least resistance". The resistance surface represents the per-pixel cost of movement across the landscape for an ecological movement of interest such as species migration or gene flow. For this statewide modeling effort, however, it was not possible to model movements of particular focal species or genes across the landscape. Therefore, the resistance layer was based primarily on landcover naturalness, under the assumption that less human-modified areas are less resistant to most ecological movements of interest.

Areas of Conservation Emphasis (ACE) build on the California Essential Habitat Connectivity map by gathering spatial data into maps for conservation planning purposes, including biodiversity, significant habitats, connectivity, climate resilience, and recreation (CDFW 2019a). The project area has a terrestrial connectivity of Rank 1 "limited terrestrial connectivity opportunity", Rank 2 "large natural habitat areas", and Rank 4 "conservation planning linkages". The rank shows the relative value compared with all other areas across within the ecoregion (CDFW 2019b) (**Figure 5.2-2**).





Further, the USFWS Recovery Plan for Upland Species of the San Joaquin Valley identifies linkage areas that are important corridors for wildlife species, (Table 12 and Figures 72-73): in Fresno County, these include the following: 1) the western section of the County, which includes the valley floor west of the San Joaquin River and Fresno Slough; 2) the Kettleman Hills to Anticline Ridge; and 3) the western valley edge from Panoche Creek to Coalinga. Other resources in the area, such as Cantua Creek and the California Aqueduct provide cover, habitat, and other necessary attributes to allow for local movement of wildlife.

The project site is located within the Pacific Flyway, a significant avian migration route. The Pixley National Wildlife Refuge and the Kern National Wildlife Refuge are both located approximately 50 miles south of the site, and the Mendota Wildlife Area, located approximately 10 miles north of the project site, are recognized stopover locations for migratory birds travelling along the Pacific Flyway (USFWS 2024, CDFW 2024). The Audubon Society has identified Important Bird Areas (IBAs) throughout the Western Hemisphere that provide essential habitat for birds (Audubon 2024). These IBAs include sites for breeding, wintering, and migrating birds and can range from only a few acres to thousands of acres in size. The Mendota Wildlife Area is an IBA and has state priority (Audubon 2024).

Other species documented at the Mendota Wildlife Area include nesting white-faced ibis (*Plegadis chihi*), breeding tricolored blackbird (*Agelaius tricolor*), and breeding black-crowned night-heron (*Nycticorax nycticorax*). Winter and spring see over 10,000 shorebirds on peak days. Summer wetlands attract breeding Northern Harriers (*Circus hudsonius*) and summering Black Terns (*Chlidonias niger*) and Forster's Terns (*Sterna forsteri*), which may eventually breed. (Audubon 2024). Late fall brings ducks and geese, sandhill crane (*Antigone canadensis*), and spring brings shorebirds to the draining impoundments. Riparian species such as white-tailed kite (*Elanus leucurus*) and blue grosbeak (*Passerina caerulea*), may be found here, particularly at the Mendota Pool. The Alkali Sink Ecological Reserve area is regularly used by greater and lesser sandhill cranes, northern harriers (*Circus hudsonius*), Swainson's hawks (*Buteo swainsoni*), mountain plover (*Anarhynchus montanus*), burrowing owl (*Athene cunicularia*) and tricolored blackbird.

Approximately 25 miles north of the project is Lone River Slough, which is a poorly studied, 30,000-acre patch of vernal pool-rich grassland, alkali scrub and freshwater marsh (i.e., the slough) with narrow bands of riparian woodland (Audubon 2024). This area survived the agricultural transformation of western Fresno/Madera Co and may represent the largest intact swath of unplowed valley floor in the San Joaquin Valley (Audubon 2024). It located northeast of Firebaugh and is known to support Swainson's hawk, great blue heron (*Ardea herodias*), and white-faced ibis.

The Panoche Valley IBA is located approximately 20 miles north of the project site and located is approximately 13 miles away from the northern end of Scenario 1 Fiber Line, which is part of the PG&E downstream network upgrades. This 91,000-acre area is

located west of I-5 and supports high concentrations of wintering raptors, large sparrow flocks, and resident grassland species like burrowing owl. Rare breeders such as grasshopper sparrow, short-eared owl, and tricolored blackbird are found here, along with wintering mountain plover and sage sparrow near its range limit. The area also is habitat for rare Central Valley species, including blunt-nosed leopard lizard, giant kangaroo rat, western pond turtle, and California red-legged frog (Audubon 2024).

Therefore, there is potential for the presence of migratory bird species within the project site due to the proximity to these areas, as well as the Pacific Flyway. The project site, including the jurisdictional components and PG&E utility switchyard do not contain identified wildlife corridors or habitat linkages for wildlife movement. The overall project site, including the jurisdictional components and PG&E utility switchyard, and surrounding lands do not contain any natural landscape blocks and are unlikely to function as local or regional wildlife corridors (RCI 2023rr).

The PG&E downstream network upgrades contain identified wildlife corridors or habitat linkages for wildlife movement, such as the Panoche Valley IBA, as mentioned above, The Scenario 2 Fiber Line and Scenario 3 Fiber Line study areas border the eastern edge of an essential connectivity area as defined by Spencer et al (2010), in a zone trending toward “more cost”, as shown in **Figure 5.2-1**. Further, the fiber line routes range from “limited connectivity opportunity” to a short section of “irreplaceable and essential corridors”, as shown in **Figure 5.2-2**. Proposed linkages as mapped (Figure 72, Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998) generally shows the slopes and mountains to the west of the project as linkages for species such as San Joaquin kit fox and Hoover’s woolly-star.

Sensitive Biological Resources

This section provides an overview of sensitive natural communities relative to the project area. It also provides information on special-status plants and animals observed within the project area or with a potential to be present. The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the lists of special-status species potentially occurring within the project area. Special-status species are plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and typically require unique habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered species (including designated or proposed critical habitat) under the Federal Endangered Species Act (FESA)
- Listed, or candidates for listing as threatened or endangered under the California Endangered Species Act (CESA)

- Bald and golden eagles protected under the Bald and Golden Eagle Protection Act (BGEPA)
- Species identified by USFWS as Birds of Conservation Concern (BCC);
- Designated as Fully Protected (FP) by the California Department of Fish and Wildlife (CDFW)
- Designated as Species of Special Concern (SSC) by CDFW
- Plants assigned a California Rare Plant Rank (CRPR) by the California Native Plant Society (CNPS), including CRPR 1A, 1B, 2, 3, and 4¹
- Plants listed as rare under the California Native Plant Protection Act
- Plants that meet the definition of rare or endangered under the California Environmental Quality Act (CEQA) section 15380 (b) and (d)
- Plants considered special-status species in local or regional plans, policies, or regulations.
- Taxa designated as special-status, sensitive, or declining species by state and federal agencies or non-governmental organizations, and determined by the California Natural Diversity Database (CNDDB) to be rare, restricted, declining, or threatened across their range in California.
- Locally significant species, meaning species that are rare or uncommon in a local context (e.g., within a county or region) or designated in local or regional plans, policies, or ordinances.
- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California.
- Taxa closely associated with habitats that are declining at significant rates in California (e.g., wetlands, riparian zones, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.).

Any other species receiving consideration during environmental review under CEQA.

Literature Review

- Staff conducted queries of the following databases as part of the literature review during preparation this analysis and as further noted throughout the analysis: USFWS Information for Planning and Consultation (IPaC) online project planning tool (USFWS 2023),
- CNPS Online Inventory of Rare and Endangered Plants of California (CNPS 2024),

1 CRPR 3 or 4 species may or may not be considered under CEQA. If a CRPR 3 or 4 species is locally rare, or the population is at an extreme end of the species range, it would be considered for impacts under CEQA.

- CDFW California Natural Diversity Database (CNDDDB) (CNDDDB 2023, CNDDDB 2024, CNDDDB 2025),
- USFWS National Wetlands Inventory Map (NWI)(NWI 2023a),
- Google Earth Pro (Google Earth Pro 2024)
- eBird (eBird 2024)
- INaturalist (INaturalist 2025)
- Staff conducted a site visit on October 17, 2024, with CDFW representative, Jim Vang, the applicant's representative, Marisa Mitchell and the applicant's consultants.

The CNPS and CNDDDB queries for the jurisdictional components of the project and the PG&E utility switchyard included the following USGS 7.5 minute topographical quadrangles: San Joaquin, Westside, Tres Picos Farms, Lillis Ranch, as well as the surrounding 14 quadrangles (Ciervo Mtn., Monocline Ridge, Levis, Cantua Creek, Tranquility, Jamesan, Kerman, Helm, Five Points, Calflax, Harris Ranch, Domengine Ranch, Joaquin Rocks, and Santa Rita Peak (CNDDDB 2023).

For the PG&E downstream network upgrades, the CNPS and CNDDDB queries included the following USGS 7.5-minute topographical quadrangles (CNDDDB 2024):

- 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 Fiber Line, Scenario 2 Fiber Line, Scenario 3 Fiber Line, 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, Gujarral Hills, Huron, Avenal, La Cima, Calflax, Kreyenhagen Hills, Westhaven, Vanguard, Kettleman City, San Joaquin, Idria, Tranquillity, Alcalde Hills, Santa Rita Peak, and Five Points.

Sensitive Natural Communities

Sensitive natural communities have been previously defined by CDFW as "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." More recently CDFW stated that sensitive natural communities with state ranks of S1–S3 (S1=critically imperiled; S2=imperiled; S3=vulnerable) should be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2023a). See **Table 5.2-2** for a complete description of "G" and "S" ranks.

There are several sensitive natural communities: Coastal and Valley Freshwater Marsh (S2.1), Monvero Residual Dunes (S1.2), Northern Claypan Vernal Pool (S1.1), Northern Vernal Pool (S2.1), Valley Needlegrass Grassland (S3.1), North Central Coast Drainage Sacramento Sucker/Roach River (SNR-“State Not Ranked”) and Valley Sink Scrub (S1.1) documented in the CNDDDB as occurring within 10 miles of the proposed project site, including the jurisdictional components and the PG&E utility switchyard.

No sensitive natural communities were documented by the applicant on or adjacent the project site, including the jurisdictional components or the PG&E utility switchyard. (RCI 2023rr). In addition, staff did not observe any sensitive natural communities during a site visit on October 17, 2024. The project site is primarily characterized by agricultural and ruderal/developed land cover types, Therefore, no vegetation communities with state rank S1 through S3, or otherwise designated as high priority or potentially rare in the current list, are present on or adjacent to in this area.

For the PG&E downstream network upgrades, the following sensitive natural communities potentially occur in the study areas based on a review of CNDDDB: Alkali Seep (G3/S2.1), Cismontane Alkali Marsh (G1/S1.1), Coastal and Valley Freshwater Marsh (G3/S2.1), Great Valley Cottonwood Riparian Forest (G2/S2.1), Great Valley Mesquite Scrub (G1/S1.1), Monvero Residual Dunes (G1/S1.2), North Central Coast Drainage Sacramento Sucker/Roach River (GNR/SNR), Northern Claypan Vernal Pool (G1/S1.1), Northern Vernal Pool (G2/S2.1), Fremont Cottonwood Woodland (G2Q/S3) and Sycamore Alluvial Woodland (G1/S1.1). However, the PG&E downstream network upgrades are not located in areas with sensitive natural communities. One sensitive natural community, 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 (RCI 2024cc). There is approximately 0.58 acres of Fremont Cottonwood Woodland within the Cantua Substation study area (RCI 2024cc). The project area for the PG&E downstream network upgrades consists of agriculture, open space with scattered shrubs, grassland, drainage features, highways, and limited developed uses. As this area is predominantly agricultural, there are no other vegetation communities with state rank S1 through S3, or otherwise designated as high priority or potentially rare are present on or adjacent to in this area.

Special-Status Plants

Based on the specialized habitat requirements (e.g., vernal pools, pinyon and juniper woodland, meadows and seeps, chenopod scrub, chaparral, coastal scrub, or serpentine soils) for special-status plants potentially occurring in the region, there is only one special-status plant species, Lost Hills crownscale, identified as having the potential to occur on the project site, including the jurisdictional components and PG&E utility switchyard (CNDDDB 2024; CNPS 2024).

Reconnaissance level surveys of the approximately 9,500-acre and a 100-foot survey buffer where publicly accessible were conducted by the applicant in December 2022

and March 2023 (RCI 2024u). In addition, plant species observed while documenting aquatic resources were recorded during jurisdictional delineation surveys conducted by the applicant on August 21-22, 2023 (RCI 2023rr). In addition, the applicant documented the presence of sensitive biological resources during biological site inspections conducted by qualified Rincon biologists each month from January 31 through September 9, 2023 (RCI 2023rr).

No special-status plant species were observed during the reconnaissance surveys or during regular inspections of the project site, including the jurisdictional components and PG&E utility switchyard, or during any protocol level surveys or habitat assessments for wildlife. Due to ongoing agricultural disturbance, Lost Hills crownscale and all other special-status plant species are not expected to occur on the project site, including all jurisdictional components. The PG&E utility switchyard has been continually disturbed by agricultural activities since at least July 2004; therefore, the special-status plant species, including Lost Hills crownscale, is not expected to occur within the PG&E utility switchyard (RCI 2024u).

For the PG&E downstream network upgrades, the applicant considered 89 special status plant species known to occur in the region (RCI 2024cc). There are two special status plant species that have a moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line grassland habitat and no potential to occur in the Scenario 2 study area and substation study areas: San Benito poppy and stinkbells. In addition, there are two federally listed species, San Joaquin woollythreads and California jewelflower, that have a low potential to occur. The remaining sensitive plant species that have a low potential to occur but are not listed under the federal or state ESAs. These species are assigned a CRPR by CNPS, including CRPR 1B.1 and 1B.2 species as well as CRPR 4.2, see **Table 5.2-1** for a complete list of species. CRPR 4.2 species may not always be considered under CEQA depending on the status of the species in the region or local area, See above under "Sensitive Biological Resources" subsection on definitions of sensitive plants.

The applicant 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 (RCI 2024cc). Although special-status plant species were not observed during the reconnaissance surveys, there remains potential for these three species to occur within the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas.

Special-Status Wildlife

The Biological Study Area (BSA) was defined by the applicant as the approximately 9,500-acre project site encompassing all jurisdictional project components, including the gen-tie line ROW, plus a general 100-foot survey buffer where accessible. This study area also included the PG&E utility switchyard plus a 100-foot buffer. General reconnaissance and site inspection survey areas included the project site plus a 100-foot buffer where accessible); protocol Swainson's hawk nesting survey areas were conducted within 0.5 mile of the project site; Swainson's hawk foraging analysis surveys

were conducted within 10 miles of the project site; and aquatic resource delineation survey areas included the project site and a 250-foot buffer where accessible).

The applicant conducted reconnaissance-level surveys in December 2022 and March 2023, which consisted of a combination of vehicular windshield surveys and pedestrian surveys (RCI 2023w). The applicant also performed regular biological site inspections each month, from January 31 through September 9, 2023, which included the project site for the jurisdictional components and the PG&E utility switchyard (RCI 2023rr). Any observations of special-status species made by the applicant's biologists during these inspections were included in evaluations of species potential to occur within the project area (RCI 2023rr).

The applicant's consultant, H.T. Harvey & Associates, prepared a focused habitat assessment for San Joaquin kit fox (*Vulpes macrotis mutica*) including a desktop evaluation within a 5-mile radius and a field survey on December 8, 9, 13, and 14, 2022. Habitat suitability was modeled based on preferred attributes from Cypher et al. (2013), aerial imagery, field observations, and home range estimates based on prey availability (RCI 2023rr).

The applicant conducted protocol surveys for Swainson's hawk (*Buteo swainsoni*) to assess nesting activity within a 0.5-mile buffer of the project site. Surveys were performed six times during the following periods: Period II (March 20–April 5, early territory establishment), Period III (April 5–April 20, nest building), Period IV (April 21–June 10, monitoring known nest sites), and Period V (June 10–July 30, monitoring for nestlings and fledglings). Additionally, the applicant completed a foraging habitat impact analysis within a 10-mile buffer and conducted regional Swainson's hawk nest surveys throughout 2023 to inform the analysis. The applicant consulted with CDFW regarding Swainson's hawk protocol guidance via email (RCI 2024u).

For the PG&E downstream network upgrades, the study areas included three alternative fiber line scenarios (Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line) plus a 100-foot buffer. The study areas for four PG&E substations, which include the existing Cantua Substation, Los Banos Substation, Midway Substation, and Gates Substation and a 100-foot buffer, are distributed across Fresno County (two substations), Merced County (one substation), and Kern County (one substation) (RCI 2024cc).

The three alternative fiber line routes are as follows: Scenario 1 Fiber Line spans 15 miles, Scenario 2 Fiber Line spans 28 miles, and Scenario 3 Fiber Line spans 25 miles. Work for Scenario 1 Fiber Line and Scenario 2 Fiber Line would occur within existing PG&E electric distribution and 230 kV transmission line corridors. Scenario 3 Fiber Line would involve underground and/or overhead installation on a dedicated pole line within PG&E's existing 500 kV transmission line corridor, transitioning to OPGW within PG&E's 230 kV transmission line corridor (RCI 2024cc). In June 2024, the applicant conducted a desktop review and reconnaissance field surveys to evaluate potential impacts on

sensitive biological resources. This information as well as additional analyses of potential impacts was included in CEC Data Request Response Set 6 (RCI 2024z, RCI 2024cc). The assessments were based on the latest available information regarding proposed activities within the PG&E alternative fiber line and PG&E substation study areas.

The results of these surveys and discussion of those special-status plant, wildlife species, and habitat communities present or with potential to occur on the proposed project site are discussed below.

Special Status Plants and Wildlife Potential For Occurrence. See **Table 5.2-1A** (Known and Potential Occurrence of Special-Status Plants) and **Table 5.2-1B** (Known and Potential Occurrence of Special-Status Plants) for a list of the sensitive plants and wildlife that have the potential to occur in or near the proposed project site. Potential for occurrence is defined as follows:

- **Present:** Species or sign of their presence recently observed on the site.
- **High:** Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.
- **Moderate:** Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.
- **Low:** Species or sign not observed on the site, and conditions marginal for occurrence.
- **Not likely to occur:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)±	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area**
Santa Clara thorn-mint (<i>Acanthomintha lanceolata</i>)	_/_/4.2/G4/S4/_	Not Likely to Occur. Suitable chaparral, cismontane woodland, coastal scrub does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
San Benito thorn-mint (<i>Acanthomintha obovata</i> ssp. <i>obovata</i>)	_/_/4.2/G4T2T4/S3S4	Not Likely to Occur. Suitable chaparral, cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. The project is also below the known elevation range of this species.
San Benito onion (<i>Allium howellii</i> var. <i>sanbenitense</i>)	_/_/1B.3/G3G4T3/S3/BLM S	Not Likely to Occur. Suitable chaparral, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. The project is out of the known elevation range of this species.
forked fiddleneck (<i>Amsinckia furcata</i>)	_/_/4.2/G4/S4/_	Not Likely to Occur. Suitable cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
California androsace (<i>Androsace elongata</i> ssp. <i>acuta</i>)	_/_/4.2/G5?T3T4/S3S4/_	Low. Suitable chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland does not occur within or adjacent the project site, including the solar facility and other jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat occurs in the Scenario 1 Fiber Line and Scenario 3 Fiber Line 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 Fiber Line study area or the substation study areas due to the lack of suitable habitat.
heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)	_/_/1B.2/G3/S2/BLM S	Low. Suitable chenopod scrub, meadows and seeps, valley and foothill grassland (sandy) does not occur within or adjacent to the solar facility and other jurisdictional components or the PG&E utility switchyard. Areas of potentially suitable chenopod scrub and grassland habitat do occur in small areas in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas where this species has low potential to occur.
Earlimart orache (<i>Atriplex cordulata</i> var. <i>erecticaulis</i>)	_/_/1B.2/G3T1/S1	Not Likely to Occur. Suitable valley and foothill grassland does not occur within or adjacent to the solar facility and other jurisdictional components or the PG&E utility switchyard.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area*+
		Scenario 1 Fiber Line through Scenario 3 Fiber Line and the Cantua Substation and Gates Substation study areas are outside the known elevation range of this species. The Midway Substation and Los Banos Substation study areas are developed and lack suitable habitat for this species.
crownscale (<i>Atriplex coronata</i> var. <i>coronata</i>)	_/_/4.2/G4T3/S3	Low. Suitable chenopod scrub, valley and foothill grassland, and vernal pools do not occur within or adjacent to solar facility and other jurisdictional components or and PG&E utility switchyard. This species has low potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line where they intersect with dense annual grassland habitat. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.
Lost Hills crowscale (<i>Atriplex coronata</i> var. <i>vallicola</i>)	/ /1B.2/G4T3/ S3/BLM S	Low. Suitable chenopod scrub, valley and foothill grassland does not occur within project site, including the jurisdictional components or PG&E utility switchyard. Suitable grassland habitat is present over 200 feet from the PG&E utility switchyard. This species has a low potential to occur within the study area of Scenario 1 Fiber Line and Scenario 3 Fiber Line where the lines intersect with chenopod scrub and grassland.
brittlescale (<i>Atriplex depressa</i>)	_/_/1B.2/G2/S2/	Low. Suitable chenopod scrub, meadows and seeps, playas, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. This species has low potential to occur in small areas in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas where undeveloped, remnant portions of the Big Blue Hills or Ciervo Hills that have clay soils where potentially suitable chenopod scrub and grassland habitat occur.
lesser saltscale (<i>Atriplex minuscula</i>)	_/_/1B.1/G2/S2/	Low. Suitable chenopod scrub, playas, valley and foothill grassland does not occur within or adjacent to the jurisdictional components or PG&E utility switchyard, however, may occur in Scenario 1 Fiber Line study area.
subtle orache (<i>Atriplex subtilis</i>)	_/_/1B.1/G2/S2/	Low. Suitable valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Suitable habitat occurs only in small areas in the Scenario 1 Fiber

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)[±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area^{*,+}
		Line and Scenario 3 Fiber Line study areas at intersections with suitable grassland habitat with alkaline soils.
Western lessingia (<i>Benitoa occidentalis</i>)	_/_/4.3/G3G4/S3S4/_	Not likely to Occur. Suitable chaparral, cismontane woodland, coastal scrub, valley and foothill grassland does not occur within or adjacent to the project site; the project is out of the known elevation range of this species.
South Coast Range morning-glory (<i>Calystegia collina ssp. venusta</i>)	_/_/4.3/G4T4/S4/_	Not likely to Occur. Suitable chaparral, cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
San Benito evening-primrose (<i>Camissonia benitensis</i>)	Delisted/_/1B.1/G2/S2/	Not likely to Occur. Suitable chaparral, cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Outside known elevation range of this species.
chaparral harebell (<i>Campanula exigua</i>) (also known as <i>Ravenella exigua</i>)	_/_/1B.2/G2/S2/_	Not likely to Occur. Suitable chaparral or serpentine rock does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Outside known elevation range of this species.
California jewelflower (<i>Caulanthus californicus</i>)	FE/SCE?/1B.1/G1/S1	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Marginally suitable chenopod scrub and grassland habitat occur in small areas in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas in undeveloped eastern edge of the Big Blue Hills or Ciervo Hills.
Lemmon's jewelflower (<i>Caulanthus lemmonii</i>)	_/_/1B.2/G3/S3	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Areas of potentially suitable grassland habitat occur in the Scenario 1 Fiber Line and Scenario 3 study areas where this species has low potential to occur.
palmate-bracted bird's-beak (<i>Chloropyron</i> = <i>Cordylanthus palmatum</i>)	E/E/1B.1/G1/S1	Not likely to Occur. Suitable chenopod scrub, valley and foothill grassland does not occur within or adjacent to the project site. including the jurisdictional and non-jurisdictional components.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)[±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area⁺⁺
Brewer's clarkia (<i>Clarkia breweri</i>)	_/_/4.2/G4/S4/_	Not Likely to Occur. Suitable chaparral, cismontane woodland, coastal scrub does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
small-flowered morning-glory (<i>Convolvulus simulans</i>)	_/_/4.2/G4/S4/_	Low. Suitable chaparral, cismontane woodland, coastal scrub does not occur within or adjacent to the project site including the jurisdictional components or PG&E utility switchyard. Areas of potentially suitable grassland habitat occur in the Scenario 3 Fiber Line study areas where this species has low potential to occur.
Hall's tarplant (<i>Deinandra halliana</i>)	_/_/1B.2/G3/S3/BLM S	Not Likely to Occur. Suitable chenopod scrub, cismontane woodland, valley and foothill grassland habitat does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Below the known elevation range for the species.
recurved larkspur (<i>Delphinium recurvatum</i>)	_/_/1B.2/G2?/S2?/BLM S	Low. Suitable chenopod scrub, cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. May occur along Scenario 2 Fiber Line and Scenario 3 Fiber Line study areas.
Hoover's eriastrum (<i>Eriastrum hooveri</i>)	Delisted/_/_/4.2/G3/S3/_	Not Likely to Occur Suitable pinyon and juniper woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
few-flowered eriastrum (<i>Eriastrum sparsiflorum</i>)	_/_/4.3/G5/S4/_	Not Likely to Occur. Suitable chaparral, cismontane woodland, great basin scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland does not occur within or adjacent to the project site. Outside of the known elevation range of this species.
elegant wild buckwheat (<i>Eriogonum elegans</i>)	_/_/4.3/G4G5/S4S5/_	Low. Suitable grassland habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 3 Fiber Line study area.
cottony buckwheat (<i>Eriogonum gossypinum</i>)	_/_/4.2/G3G4/S3/S4/_	Low. Suitable chenopod scrub, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 3 Fiber Line study area.
protruding buckwheat (<i>Eriogonum nudum</i> var. <i>Indictum</i>)	_/_/4.2/G5T4/S4/_	Not Likely to Occur. Suitable chaparral, chenopod scrub, cismontane woodland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)[±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area⁺⁺
Idria buckwheat (<i>Eriogonum vestitum</i>)	_/_/4.3/G3/S3/_	Not Likely to Occur. Suitable valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
San Benito poppy (<i>Eschscholzia hypocoides</i>)	_/_/4.3/G4/S4/_	Moderate. Suitable chaparral, cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. This species has a moderate potential to occur in the Scenario 3 Fiber Line study area. Marginally suitable grassland habitat is present in the Scenario 1 Fiber Line study area where it has a low potential to occur.
San Joaquin spearscale (<i>Extriplex joaquinana</i>)	_/_/1B.2/G2/S2/BLM S	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Suitable chenopod scrub, meadows and seeps, playas, valley and foothill grassland occurs in limited locations in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas where this species has a low potential to occur.
stinkbells (<i>Fritillaria agrestis</i>)	_/_/4.2/G3/S3/_	Moderate. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Suitable chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland occurs in marginally suitable grassland habitat is present in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas.
San Benito fritillary (<i>Fritillaria viridea</i>)	_/_/1B.2/G2/S2/BLMS, USFS S	Not Likely to Occur. Suitable chaparral, cismontane woodland, rocky streambanks and serpentine slopes do not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Outside of the known elevation range of this species.
phlox-leaf serpentine bedstraw (<i>Galium andrewsii ssp. gatense</i>)	_/_/G5T3/S3/_	Not Likely to Occur. Suitable chaparral, cismontane woodland, lower montane coniferous forest does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
golden goodmania (<i>Goodmania luteola</i>)	_/_/4.2/G3/S3/_	Low. Suitable meadows and seeps, Mojavean desert scrub, playas, valley and foothill grassland exists only in the Scenario 1 Fiber Line and Scenario 3 study areas.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)[±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area^{*,+}
vernal barley (<i>Hordeum intercedens</i>)	_/_/3.2/G3/G4/S3S4/_	Not Likely to Occur. Suitable coastal dunes, coastal scrub, valley and foothill grassland does not exist within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
alkali-sink goldfields (<i>Lasthenia chrysanthra</i>)	_/_/1B.1/G2/S2/_	Not Likely to Occur. Suitable alkaline sinks, wet saline flats, and valley grassland do not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
Ferris' goldfields (<i>Lasthenia ferrisiae</i>)	_/_/4.2/G3/S3/_	Not Likely to Occur. Suitable alkaline sinks and vernal pools do not exist within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
rayless layia (<i>Layia discoidea</i>)	_/_/1B.1/G2/S2/-	Not Likely to Occur. Suitable chaparral, cismontane woodland, lower montane coniferous forest, serpentine alluvium and serpentine talus does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
pale-yellow layia (<i>Layia heterotricha</i>)	_/_/1B.1/G2/S2/BLM S, USFS S	Not Likely to Occur. Suitable cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland habitat does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Below the known elevation range of the species.
Munz's tidy-tips (<i>Layia munzii</i>)	_/_/1B.2/G2/S2/BLM S	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Suitable chenopod scrub, valley and foothill grassland only occurs in portions of the Scenario 1 Fiber Line and Scenario 3 Fiber Line 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.
Panoche pepper-grass (<i>Lepidium jaredii</i> ssp. <i>album</i>)	_/_/1B.2/G2G3T2T3/S2S3/ BLM S	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. This species has low potential to occur in a limited number of locations along the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas at intersections with alluvial fans and washes draining from the Ciervo and Big Blue Hills.
serpentine leptosiphon (<i>Leptosiphon ambiguous</i>)	_/_/4.2/G4/S4/_	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. Suitable grassland habitat is not present in the Scenario 2 Fiber Line study area or the substation study areas.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)[±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area^{*+}
showy golden madia (<i>Madia radiata</i>)	_/_1B.1/G3/S3/BLM S	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas.
Indian Valley bush-mallow (<i>Malacothamnus aboriginum</i>)	_/_1B.2/G3/S3/BLM S	Low. Suitable chaparral, cismontane woodland, granitic outcrops do not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. Outside of the known elevation range of this species. May occur along the Scenario 1 Fiber Line through Scenario 3 Fiber Line study area, where a 1998 CNDDDB record exists along Salt Creek.
Sylvan microseris (<i>Microseris sylvatica</i>)	_/_1B.2/G4/S4/_	Low. Suitable habitat does not occur within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 1 Fiber Line and Scenario 3 study areas. Suitable grassland habitat is not present in the Scenario 2 Fiber Line study area or the substation study areas.
San Benito monardella (<i>Monardella antonina ssp. benitensis</i>)	_/_4.3/G4T3/S3/_	Not Likely to Occur. Suitable chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Outside known elevation range of this species.
San Joaquin woollythreads (<i>Monolopia congdonii</i>)	FE/_1B.2/G3/S2/_	Low. Suitable chenopod scrub, valley and foothill grassland habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. May occur along Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas.
shining navarretia (<i>Navarretia nigelliformis ssp. radians</i>)	_/_1B.2/G4T2/S2/BLM S	Low. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. This species has low potential to occur in portions of the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas where they intersect suitable grassland habitat.
Panoche navarretia (<i>Navarretia panochensis</i>)	_/_1B.3/G3/S3/-	Not Likely to Occur. Suitable chenopod scrub, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Outside known elevation range of this species.
prostrate vernal pool navarretia (<i>Navarretia prostrata</i>)	_/_1B.2/G2/S2/_	Low. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. This species has low potential to occur in portions of the Scenario 1 Fiber Line and Scenario 3 study areas where they intersect grassland habitat with mesic soils, primarily near washes draining from the Ciervo and Big Blue Hills.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (Scientific Name)[±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area⁺⁺
California alkali grass (<i>Puccinellia simplex</i>)	_/_1B.2/G2/S2/_	Not Likely to Occur. Suitable chenopod scrub, meadows and seeps, valley and foothill grasslands do not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	_/_1B.2/G3/S3/BLM S	Not Likely to Occur. Suitable marshes and swamps do not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Potentially suitable irrigation ditches were observed throughout the project site during applicant's reconnaissance survey in December 2022 (RCI 2023rr); however, this species has not been documented within 10 miles of the project site.
chaparral ragwort (<i>Senecio aphanactis</i>)	_/_2B.2/G3/S2/_	Low. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. There is a low potential for this species to occur in drainages and washes with clay or alkaline soils that intersect the Scenario 1 Fiber Line and Scenario 3 study areas in the undeveloped eastern edge of the Big Blue Hills and Ciervo Hills.
Guirado's goldenrod (<i>Solidago guiradonis</i>)	_/_4.3/G3/S3/_	Not Likely to Occur. Suitable cismontane woodland, valley and foothill grassland does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Outside known elevation range of this species.
plumed jewelflower (<i>Streptanthus insignis</i> <i>ssp. insignis</i>)	_/_4.3/G3G4T3T4/S3S4/_	Not Likely to Occur. Suitable foothill woodland, chaparral, and pinyon-juniper woodland do not occur on or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
San Joaquin bluecurls (<i>Trichostema ovatum</i>)	_/_4.2/G3/S3	Low. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 1 Fiber Line and Scenario 3 study areas. Suitable grassland habitat is not present in the Scenario 2 Fiber Line study area or the substation study areas.
Hernandez bluecurls (<i>Trichostema</i> <i>rubispalum</i>)	_/_4.3/G4/S4/_	Not Likely to Occur. Suitable broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area ^{*+}
--	--	---

±This list is not exhaustive; rather it reflects the entirety of staff's research and analysis as presented here. See below Notes for more information.

*Denotes the seasonality of the species that could be affected directly or indirectly by project impacts.

+The Potential for Occurrence has been amalgamated from applicant's filings, staff's research, agency and other coordination and outreach, and other sources such as mentioned throughout this assessment.

**BCC in Region 1 only.

STATUS CODES:

State

SSC: California Species of Special Concern. Species of concern to CDFW because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

SE: State listed as endangered

ST: State listed as threatened

SCE: State listed as candidate

SH: Possibly extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.

FP: Fully protected

D: Delisted taxon that is considered recovered

SA: Special Animal. Species is tracked in the CNDDDB (due to rarity, limited distribution in California, declining throughout the range, etc.) but holds no other special status at the state or federal level.

WL: Watch List

Federal

FE: Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT: Federally listed, threatened: species likely to become endangered within the foreseeable future

BCC: Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities

BLM S: Bureau of Land Management sensitive species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act.

USFS S: United States Forest Service Sensitive Species: Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and trends in habitat capability that would reduce a species' existing distribution.

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area ⁺⁺
California Rare Plant Ranking (CRPR)		
1A Presumed extirpated in California and either rare or extinct elsewhere		
1B: Rare or endangered in California and elsewhere		
2A: Presumed extirpated in California but more common elsewhere		
2B: Rare or endangered in California but more common elsewhere		
3: Plants for which we need more information- Review list		
4: Plants of limited distribution – Watch list		
0.1: Seriously threatened in California (over 80 of occurrences threatened/high degree and immediacy of threat)		
0.2: Moderately threatened in California (20-80% of occurrence threatened/moderate degree and immediacy of threat)		
0.3: Not very threatened in California (<20% of occurrence threatened/low degree and immediacy of threats or no current threats known)		
Global Rank/State Rank		
Global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. Subspecies are denoted by a T-Rank; multiple rankings indicate a range of values		
G1 = Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations)., very steep declines or other factors.		
G2 = Imperiled - At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines or other factors.		
G3 = Vulnerable - At moderate risk of extinction due to very restricted range, relatively few populations (often 80 or fewer), recent and widespread declines or other factors.		
G4 = Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines other factors.		
G5 = Secure - Common; widespread and abundant.		
Variant Global Conservation Status Rank		
GU = Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.		
Intraspecific Taxon Global Conservation Status Rank		
T# - Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T rank.		
Global Rank Qualifier		
? = Inexact Numeric Rank – Denotes inexact numeric rank.		
Q = Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable.		

TABLE 5.2-1A KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS PLANTS

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/CRPR/G- Rank/S -Rank/Other	Potential for Occurrence in Project Impact Area ^{*+}
--	--	---

State rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain the imperilment status only within California's state boundaries

S1 = **Critically Imperiled** in state because of extreme rarity (often 5 or fewer populations) or because of other factors such as deep declines making it extremely vulnerable to extirpation from state.

S2 = **Imperiled** in the state because of rarity due to very restricted range, few populations (often 20 or fewer), steep declines, or other factors making vulnerable to extirpation from state.

S3 = **Vulnerable** in state due to restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

S4 = **Apparently secure** – Unknown but not rare in the state; some cause for long-term concern due to declines or other factors.

S5 = **Secure** – Common, widespread, and abundant in the state.

SNR = State Not Ranked

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (Scientific Name)±	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area**
Invertebrates		
Ciervo aegilian scarab beetle (<i>Aegialia concinna</i>)	_/_/G1/S1/BLM S	Not Likely to Occur. No suitable loose sandy substrate associated with dunes habitats occur within or adjacent the project site, including the jurisdictional and non-jurisdictional components.
Crotch's bumble bee (<i>Bombus crotchii</i>)	_/_/C (E)/G2/ S2/_	Low. Occurs in open grassland and scrub habitats. Scattered floristic resources may be found in the jurisdictional portions of the project site or immediately adjacent the jurisdictional portions of the project site. This species is not expected to occur in the non-jurisdictional components of the project, including the PG&E utility switchyard.
American bumble bee (<i>Bombus pensylvanicus</i>)	_/_/G3G4/S2/_	Not likely to occur. Associated plant species include wood lily, dames rocket, and white clover in the summer, and vetch, knapweed, and Canadian tick trefoil in the late summer. These species are not present on the proposed project site, including the jurisdictional and non-jurisdictional components.
longhorn fairy shrimp (<i>Branchinecta longiantenna</i>)	E/_/G2/S2/_	Not likely to occur. Vernal pools do not occur within or adjacent the project site, including the jurisdictional and non-jurisdictional components. While cysts of this species can persist for years within the soils and can move great distances during flood events, the nearest recording in the CNDDDB is from Merced County, over 50 miles from the project site.
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T/_/G3/S3/_	Not likely to occur. Vernal pools do not occur within or adjacent the project site, including the jurisdictional and non-jurisdictional components. While cysts of this species can persist for years within the soil and can move great distances during flood events, the nearest recorded occurrence to the proposed project site is from 1989 and is greater than 30 miles away from the project site (CNDDDB 2023).
San Joaquin dune beetle (<i>Coelus gracilis</i>)	_/_/1/S1/BLM S	Not likely to occur. No suitable dune habitat occurs within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
monarch butterfly (<i>Danaus plexippus</i>) pop 1	C/_/G4T12Q/S2/USFS S	Not likely to Occur. Several stands of eucalyptus trees are present within or adjacent the project site for the solar facility and other jurisdictional components. However, this species is only known to overwinter in coastal California, and no host plant (milkweed) are available on or adjacent to the project site.

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (Scientific Name)±	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area**
California linderiella (<i>Linderiella occidentalis</i>)	_/_/G2G3/S2S3/_	Not Likely to Occur. Suitable vernal pools do not occur in or adjacent to the project site, including the jurisdictional and non-jurisdictional components. From Shasta County to Fresno County and across the valley to the coast and Transverse Ranges from Willits in Mendocino County south to Ventura County.
molestan blister beetle (<i>Lytta molesta</i>)	_/_/G2/S2/_	Not Likely to Occur. This poorly-understood species is known only from the Central Valley of California from Contra Costa to Kern and Tulare Counties. The primary habitat is considered grassland. Larvae are known to feed on bee nests and bee larvae. The nearest CNDDDB occurrence, from 1957, is 1.4 miles east of Scenario 3 Fiber Line study area.
Hurd's metapogon robberfly (<i>Metapogon hurdi</i>)	_/_/G1G2/_/_	Not Likely to Occur. Suitable sand dune habitat does not occur in or adjacent to the project site, including the jurisdictional and non-jurisdictional components. Known from sand dunes at Antioch and in Fresno (Fresno Irrigation District 2011).
Wasbauer's protodufourea bee (<i>Protodufourea wasbaueri</i>)	_/_/G1/S1/_	Not Likely to Occur. Restricted to pollen from the plant family Hydrophyllaceae, genera such as <i>Phacelia</i> and <i>Emmenanthe</i> . This species is only known to occur in San Benito County.
Reptiles and Amphibians		
California tiger salamander pop 1 (<i>Ambystoma californiense</i>)	T/T/G2G3T3/S3/WL	<p>Low. This species utilizes ground squirrel burrows in grasslands. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. In the Scenario 1 Fiber Line and Scenario 3 study areas there is annual grassland along the western edge of the Ciervo Hills and Big Blue Hills however these areas do not support suitable aquatic habitat for the species. These existing seasonal impoundments in the annual grassland are generally small, intermittently dry, and isolated (no other ponded water occurring within California tiger salamander dispersal range).</p> <p>The closest known CNDDDB occurrences are over 10 miles away. There are no California tiger salamander occurrences within 10 miles of the grassland habitat in the Scenario 1 Fiber Line 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 Fiber Line and Scenario 3 study areas.</p>

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (Scientific Name)±	Status Fed/State/G-Rank/S-Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area*+
Northern California legless lizard (<i>Anniella pulchra</i>)	_/_/G3/S2S3/CDFW SSC, USFS S	Not Likely to Occur. Suitable sandy or loose loamy soils with high moisture content do not occur within or adjacent to the project area, including the jurisdictional and non-jurisdictional components.
California glossy snake (<i>Arizona elegans occidentalis</i>)	_/_/G5T2/S2/SSC	High. Suitable scrub and grasslands habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. There is high potential for this species to occur in the Scenario 1 Fiber Line and Scenario 3 study areas. It has no potential to occur in the Scenario 2 Fiber Line study area and in the substation areas due to the lack of suitable scrub and grassland habitat in those locations.
western pond turtle (<i>Emys marmorata</i>)	_/_/G3G4/S3/BLM S, CDFW SSC, USFS S	Not Likely to Occur. Suitable ponds, marshes, rivers and streams do not occur within or adjacent the project site, including the jurisdictional and non-jurisdictional components.
San Joaquin coachwhip (<i>Masticophis flagellum ruddocki</i>)	_/_/G5T2T3/S3/CDFW SSC	Low to Moderate. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components. An area of suitable open dry habitat with nearby ground squirrel burrows occurs west of the PG&E utility switchyard and adjacent the project site. Areas of potentially suitable scrub and grassland habitat with little or no tree cover occur in the Scenario 1 Fiber Line and Scenario 3 study areas where they intersect undeveloped remnants of the Ciervo Hills east of I-5 and the Big Blue Hills. There is a moderate potential for this species to occur in the Scenario 1 Fiber Line 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. Additionally, this species has been recorded on a limited number of occasions on the margins of roads in agricultural areas.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E/E/G1/S2/CDFW FP	Moderate. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components due lack of suitable habitat from current and past agricultural practices, including crop irrigation and disking. There is potential habitat for this species west of I-5 and a CNDDDB record from 1993 overlaps the PG&E utility switchyard. This species has a low potential to occur at the PG&E utility switchyard due to adjacent suitable habitat. There is marginally suitable scrub habitat in the Scenario 1 Fiber Line study area where it intersects remnant portions of the Ciervo Hills on the east side of I-5. Part of the Scenario 3 Fiber Line study area consists of annual grassland in the Big Blue Hills and Ciervo Hills, characterized by steep terrain and dense grassland

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (Scientific Name)±	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area*+
		vegetation with limited shrub cover. However, the area includes a dirt access road along the transmission corridor and sections show evidence of past cattle grazing, which may have created sparsely vegetated areas with marginal suitability. Therefore, this species has moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas.
coast horned lizard (<i>Phrynosoma blainvillii</i>)	_/_/G4/S4/SS, BLM S	Low to Moderate. Suitable habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard. This species has moderate potential to occur in the Scenario 1 Fiber Line 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 the Scenario 3 study areas. This species is not expected to occur in the Scenario 2 Fiber Line 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.
foothill yellow-legged frog - central coast DPS (<i>Rana boylei</i> pop. 4)	T/E/G3T2/S2/BLM S, USFS S	Not Likely to Occur. Suitable shaded shallow streams and cobble substrate does not occur within or adjacent to the project site, including the jurisdictional and non-jurisdictional components.
western spadefoot (<i>Spea hammondi</i>)	_/_/G2G3/S3S4/SSC, BLM S	Not Likely to Occur. Vernal pools for breeding and egg-laying do not occur within or adjacent to the solar facility and other jurisdictional or non-jurisdictional components or PG&E utility switchyard.
giant gartersnake (<i>Thamnophis gigas</i>)	T/T/G2/S2/_	Not Likely to Occur. Suitable streams and freshwater marshes do not occur within or adjacent to the proposed project site including the jurisdictional and non-jurisdictional components. Although irrigation ditches are present, they are managed, lack vegetation for basking activities, are frequently created and destroyed, and do not convey water (RCI 2023rr).
two-striped gartersnake (<i>Thamnophis hammondi</i>)	_/_/G4 /S3S4/SSC, BLM S, USFS S	Not Likely to Occur. Suitable fresh water, streams, and riparian growth do not occur within or adjacent to the project site including the jurisdictional and non-jurisdictional components.
Birds		
tricolored blackbird (<i>Agelaius tricolor</i>)(nesting colony)	_/_/T/G1G2/BLM S, CDFW SSC, USFWS BCC	Low (nesting) and Moderate (foraging). Low quality nesting habitat occurs in the project vicinity, including Basin 12, and possibly Basin 16. Moderate quality foraging habitat occurs within the jurisdictional project components when areas are not disked, and may occur off site immediately adjacent to the solar field and jurisdictional components, including offsite wetlands and other

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S-Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area* ⁺
		<p>aquatic features within 500 feet of the project boundary (such as Basin 14, RCI 2023rr). No foraging habitat exists at the PG&E utility switchyard.</p> <p>A few parcels along the Scenario 1 Fiber Line, 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 the species to nest in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 fiber optic study areas. Potentially suitable foraging habitat for tricolored blackbird exists in the agricultural areas of the Scenario 1 Fiber Line, 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 Fiber Lines, and Cantua Substation study areas.</p>
short-eared owl (<i>Asio flammeus</i>)	_/_/G5/S2/CDFW SSC	<p>Moderate. This species prefers grasslands and open areas, where they perch in low trees or on the ground. and nest on the ground amid grasses and low plants. Usually choose dry sites—often on small knolls, ridges, or hummocks—with enough vegetation to conceal the incubating female. This species is generally not considered to breed in Central California, however, they are recorded in the CNDDDB east of Scenario 1 Fiber Line. Suitable nesting habitat does not occur within or adjacent to the solar facility and other jurisdictional components or PG&E utility switchyard, however, two CNDDDB records exist east of Scenario 1 Fiber Line study area, approximately 1,300 feet or less from the study area. Therefore, this species has a moderate potential to occur in Scenario 1 Fiber Line study area.</p>
Golden eagle (<i>Aquila chrysaetos</i>)(nesting, wintering)	_/_/G5/S3/BLM S, FP, WL	<p>Present (foraging). This species was observed flying over the solar facility site on May 11, 2023. The project site and survey buffers are outside the nesting range of this species. Suitable foraging habitat occurs within and adjacent to the solar facility and other jurisdictional components as well as the PG&E utility switchyard. This species has high potential to forage in the 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</p>

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>)[±]	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area^{*+}
		Substations study areas, which are dominated by developed/disturbed land cover.
Burrowing owl (<i>Athene cunicularia</i>)	_/_SCE/G4/ S3/BLM S, USFWS BCC	Present (nesting and foraging). Occurs in open, dry annual or perennial grasslands, deserts, and scrublands. This species was observed within the survey area for solar facility and other jurisdictional components, and numerous CNDDDB records exist within 10 miles of the project. In addition, suitable habitat, with suitable burrows and irrigation ditches, are found on or adjacent to the solar facility and other jurisdictional components. There is high potential for this species to occur as a nesting or foraging species within Scenario 1 Fiber Line, Scenario 2, Scenario 3 study areas, as well as at the Cantua Substation. 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. It is not expected to occur with the utility switchyard.
ferruginous hawk (<i>Buteo regalis</i>)	_/_G4/S3S4/WL	Present (foraging). This species was documented actively foraging on December 16, 2022, within the solar facility survey area. Suitable nesting habitat which includes sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats do not occur within or adjacent to the project site, however, open agricultural fields suitable for foraging do occur. Open agricultural fields suitable for foraging also occur in the Scenario 1 Fiber Line, 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.
Swainson's hawk (<i>Buteo swainsoni</i>)	_/_T/G5/S4/BLM S	Present (foraging and nesting). Five active nests were observed during surveys (within the footprint for solar facility) (RCI 2023w). This species is expected to nest on and adjacent the site in the future, and approximately 30 suitable nest trees were identified within the solar facility project area. This species is not expected to nest or forage at the PG&E utility switchyard project site but could forage in suitable grassland habitats adjacent to the site. This species has high potential to forage in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 fiber optic study areas and the Cantua Substation study area. It has no potential to nest in the Scenario 1 Fiber Line study area, but moderate potential to nest in riparian trees in Cantua Creek adjacent to the Cantua

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S-Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area ^{*+}
		Substation study area and in Los Gatos Creek in the Scenario 2 and Scenario 3 study areas. It has a low potential to nest in Cantua Creek in the Scenario 2 Fiber Line 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.
mountain plover (<i>Charadrius montanus</i>)	_/_G3/S2/BLM S, CDFW SSC, USFWS BCC	Present (foraging). Documented throughout the project site during the reconnaissance surveys in December 2022, across the most northern portion of the site in freshly disked/flooded agricultural fields. This species does not breed in the western U.S. Agricultural fields suitable for foraging occur in the Scenario 1, Scenario 2, and Scenario 3 Fiber Line study areas, and in a portion of the Cantua Substation study area with agricultural land cover.
Northern harrier (<i>Circus hudsonius</i>)	_/_G5/S3/CDFW SSC	Present (foraging). This species was documented foraging in the project site, specifically the solar facility during a site inspection conducted on April 5, 2023 (RCI 2024cc). Suitable foraging habitat occurs within and adjacent to the project area for the solar facility and other jurisdictional components as well as the PG&E utility switchyard. The species has high potential to forage in the agricultural areas in the Scenario 1 Fiber Line to 3 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, the Cantua Substation study area, or the utility.
White-tailed kite (<i>Elanus leucurus</i>)*nesting	_/_G5/S3S4/CDFW FP, BLM S	Present (foraging/low potential nesting). This species was observed foraging along a canal within the project site, specifically for the solar facility during a site inspection conducted on May 24, 2023. Suitable nest trees occur within the solar facility project area; however, nesting has not been documented for this species within 10 miles of the project site, including the solar facility and other jurisdictional components or adjacent buffers. All three 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

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>)[±]	Status Fed/State/G-Rank/S-Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area^{*,+}
		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.
California horned lark (<i>Eremophila alpestris actia</i>)	_/_G5T4Q/S4/CDFW WL	Present (foraging/moderate nesting potential). This species was documented within the project site during the reconnaissance surveys in December 2022; five observations in eBird are approximately 1,000 feet south of the gen-tie west of the California Aqueduct, the most recent in June 2022. Suitable foraging habitat is present in agricultural fields on the project site, including the solar facility and other jurisdictional components. This species could also forage in the vicinity of the PG&E utility switchyard. Breeding habitat is present in fields that are not disked and other open and barren lands across the project site, including the solar facility and other jurisdictional components. The Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area have suitable agricultural fields for foraging and open bare ground for nesting at the margins of agricultural fields and groves.
Merlin (<i>Falco columbarius</i>)*wintering population	_/_G5/S3S4/CDFW WL	Present. This species was documented within the project site during the reconnaissance surveys in December 2022. This species does not breed in California. The species has a low potential to forage in Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas and Cantua Substation study area in agricultural fields and edges of grasslands; however, no suitable nesting habitat is present.
prairie falcon (<i>Falco mexicanus</i>) *nesting	_/_G5/S4/CDFW WL	Present (foraging). This species was documented within the project site during the reconnaissance surveys in December 2022 and a site investigation in April 2023. Suitable breeding sites along cliffs do not occur within or adjacent to the project site for either the jurisdictional or non-jurisdictional components. Suitable foraging habitat is present in the retired and managed agricultural fields within the project site and buffers. There is a high potential for this species to forage in Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas. It has a low potential to forage near the Cantua Substation study area but not likely to forage near the other substation study areas.
California condor (<i>Gymnogyps californianus</i>)	E/E/G1/S1/ FP	Low (foraging)/ Not Likely to Occur (roosting/nesting). Occur in vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Foraging habitat includes open grasslands, oak savannah foothills, and beaches adjacent to coastal mountains. Roost on large trees or snags, or on rocky outcrops and cliffs. Nests are located in caves and

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (Scientific Name)±	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area**
		ledges of steep rocky terrain or in cavities and broken tops of old growth conifers. May rarely fly in the area near or over the project site, including the jurisdictional and non-jurisdictional components. The nearest occurrence of this species is more than 10 miles from the PG&E downstream network upgrade study area.
Loggerhead shrike (<i>Lanius ludovicianus</i>)(nesting)	_/_/G4/S4/SSC	Present (foraging) (low nesting). This species was observed foraging within the proposed solar facility project area during the reconnaissance survey in December 2022 and during a site inspection on February 22, 2023. Therefore, this species is expected to occur on the project site, including the solar facility and other jurisdictional components. This species is expected to occur in the project area for the PG&E utility switchyard. There is high potential for the species to forage in agricultural areas of the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. This species has low potential to nest in the Scenario 1 Fiber Line study area in marginally suitable habitat in atriplex scrub. 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.
Belding's savannah sparrow (<i>Passerculus sandwichensis beldingi</i>)	_/_/G5T3/S3/SSC	Not Likely to Occur. No appropriate salt marsh habitat occurs on or adjacent the project site, including the jurisdictional and non-jurisdictional components.
white-faced ibis (<i>Plegadis chihi</i>)*nesting colony	_/_/G5/S3S4/WL	Not Likely to Occur. No suitable shallow freshwater marsh habitat with dense tule thickets for nesting within or adjacent the project site, including the jurisdictional and non-jurisdictional components.
Oregon vesper sparrow (<i>Poocetes gramineus affinis</i>)*wintering	_/_/G5T2/S2/SSC, BLM BCC	Present (wintering). This species was observed within the proposed solar facility project area during a site inspection on April 5, 2023. There is suitable foraging habitat throughout the project site, including the solar facility and other jurisdictional components in retired and managed fields. This species is not expected to occur the PG&E utility switchyard. This species has a high potential to occur in the Fiber Line study areas and the Cantua substation. This species winters in California and is not expected to nest.
Yellow warbler	_/_/G5/S3/SSC	Present (migratory). This species was observed within the within the proposed solar facility project area during a site inspection on May 8, 2023.

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>)[±]	Status Fed/State/G-Rank/S-Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area*⁺
(<i>Setophaga petechia</i>) *nesting colony		There is no suitable woodland/shrub nesting habitat within or adjacent the entire project site, including the jurisdictional and non-jurisdictional components.
Le Conte's thrasher (<i>Toxostoma lecontei</i>)	_/_/G4/S3/SSC	Low (foraging). This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable desert habitat. This species has a low potential to occur in Scenario 1 Fiber Line study area but not the other PG&E downstream network upgrade study areas.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	_/_/G5/S3/SSC	Moderate (foraging). Forages in grasslands, croplands, or savannas. Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. This species has a moderate potential to occur in a freshwater wetland in the project study area for the jurisdictional components. This species is not expected to occur in the project area for the PG&E utility switchyard. There is potentially suitable foraging habitat in the agricultural areas within the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas, and in a portion of the Cantua Substation study area. No suitable foraging habitat is present in the Los Banos, Midway, or Gates Substations study areas, which are dominated by developed/disturbed land cover.
Bats		
western mastiff bat (<i>Eumops perotis californicus</i>)	_/_/G4G5T4/S3S4/BLM S	Not Likely to Occur. Occurs in desert scrub to woodland in the southwestern U.S. This species forages in open areas and roosts in exfoliating rock slabs of vertical cliffs and rugged canyons, where they roost deep inside narrow crevices. May also utilize buildings. Nearby CNDDDB records were in populated areas such as the city of Fresno. This species is not expected in the project area for the jurisdictional components or the PG&E utility switchyard. This species has low potential to forage and roost in the Scenario 2 Fiber Line and Scenario 3 Fiber Line study areas. It is not likely to occur near the Scenario 1 Fiber Line or substation study areas for the PG&E downstream network upgrades.

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (Scientific Name)±	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area*+
western red bat (<i>Lasiurus frantzii</i>)	_/_G4/S3/CDFW SSC	Moderate. Roost almost exclusively in trees among the leaves and branches. Prefer riparian habitat near water and roost in sycamore, cottonwood, velvet ash, and elder trees. Can be found in fruit and nut orchards in California's Central Valley. This species is not expected in the project area for the jurisdictional components, but has a moderate potential to occur in the PG&E utility switchyard due to the presence of an almond orchard and water sources nearby, including Cantua Creek. This species has low potential to forage and roost in the Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line study areas and Cantua Substation study area. This species is not expected in the Los Banos, Midway, or Gates Substations study areas, which are dominated by developed/disturbed land cover.
Yuma myotis (<i>Myotis yumanensis</i>)	_/_G5/S4/ BLM S	Not Likely to Occur. Occurs throughout western North America. Occasionally roosting in mines or caves but are most often found in buildings or bridges. Tree cavities are used for nursery roosts. Forage over water in forested areas. This species is not expected to occur in the project area for the jurisdictional and non-jurisdictional components due to lack of suitable habitat.
Mammals		
Nelson's (=San Joaquin) antelope squirrel (<i>Ammospermophilus nelsoni</i>)	_/_T/G2G3/S3	Moderate. This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable shrubland habitat. The nearest recorded CNDDDB occurrence is from 2017, in the Lillis Ranch quadrangle, in the Ciervo Hills, approximately 3.5 miles northwest of the PG&E utility switchyard. There are also historical CNDDDB records (greater than 30 year) in the vicinity of the Scenario 1 Fiber Line and Scenario 3 study areas. This species has moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. This species is not likely to occur in the Scenario 2 Fiber Line or substation study areas.
giant kangaroo rat (<i>Dipodomys ingens</i>)	E/E/G1/G2/	Moderate. This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable grassland habitat or alkali scrub habitat. Marginally suitable scrub and annual grassland habitats are present in the Scenario 1 Fiber Line and Scenario 3 study areas where they intersect the undeveloped Big Blue Hills and remnant Ciervo Hills east of I-5. The Scenario 3

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area* ⁺
		Fiber Line study area includes areas with dense grassland and high topographic relief, alongside a dirt access road and signs of past cattle grazing, which has created sparsely vegetated patches. Therefore, this species has moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas. This species is not likely to occur in the Scenario 2 Fiber Line or substation study areas.
Short-nosed kangaroo rat (<i>Dipodomys nitratoides brevinasus</i>)	_/_/G3T1T2/S1S2/SSC	Moderate. Found in grassland and desert shrub associations. This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable grassland habitat or desert scrub habitat. Potentially suitable scrub habitat exists in the Ciervo Hills where it is intersected by Scenario 1 Fiber Line study area, while marginally suitable grassland habitat is found in Scenario 3 Fiber Line. The species has moderate potential to occur in Scenario 1 Fiber Line study area and low potential in Scenario 3 Fiber Line study area. This species is not likely to occur in the Scenario 2 Fiber Line or substation study areas for the PG&E downstream network upgrades.
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	E/E/G3TH/SH	Not Likely to Occur. Occurs in the central portion of the San Joaquin Valley in grassland habitat where bare alkaline clay-based soils subject to inundation occur. There are known CNDDDB occurrences on the eastern side of the San Joaquin Valley. This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable habitat. The species has low potential to occur in Scenario 1 Fiber Line Scenario 3 Fiber Line study areas. This species is not likely to occur in the Scenario 2 Fiber Line or substation study areas
big-eared kangaroo rat (<i>Dipodomys venustus elephantinus</i>)	_/_/G3TH/SH/_	Not Likely to Occur. Occurs in chaparral habitat. This species is not expected to occur in the project area for the jurisdictional and non-jurisdictional components due to lack of suitable habitat.
Tulare grasshopper mouse (<i>Onychomys torridus tularensis</i>)	_/_/G5T1T2/S1S2/SSC, BLM S	Low to Moderate. Restricted to the southern San Joaquin Valley, including the Tulare sub-basin, Carrizo and Elkhorn plains, and Panoche Valley. Inhabits grassland, blue oak savanna alkali sink scrub, and saltbush scrub. This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable habitat. Potentially suitable scrub habitat exists in the Ciervo Hills fragments intersected by Scenario 1 Fiber

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S-Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area* ⁺
		Line, while marginally suitable grassland habitat is found in Scenario 3 Fiber Line study area. There is a low potential for this species to occur in the Scenario 3 Fiber Line study area.
San Joaquin pocket mouse (<i>Perognathus inornatus</i>)	_/_/G2G3/S2S3/BLM S_	Low. Occurs in dry, open grasslands or scrub areas on fine-textured soils. This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable habitat. This species has a low potential to occur along Scenario 1 Fiber Line study area.
American badger (<i>Taxidea taxus</i>)	_/_/G5/S3/SSC	Present. Suitable habitat occurs throughout all areas of the project site, including the jurisdictional and non-jurisdictional components. This species is known to occur within the solar facility project area (RCI 2023w, Figure 5.12-3a through Figure 5.12-3e). This species has a high potential to occur the Scenario 1 Fiber Line to 3 and Cantua Substation 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.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E/T/G4T2/S3/_	Low to High. Suitable habitat occurs within PG&E utility switchyard project area and immediately adjacent to the west. California ground squirrel, Botta's pocket gopher, and Heermann's kangaroo rat provide suitable burrows in the western portion of project site, near the PG&E utility switchyard project area. May disperse through or forage within the jurisdictional project areas, specifically the gen-tie line corridor and the non-jurisdictional project areas, specifically the PG&E utility switchyard. This species may occur in the PG&E downstream network upgrade study areas. The species may travel through agricultural areas of the Scenario 1 Fiber Line, 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.

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area ^{*+}
--	---	---

[±]This list is not exhaustive; rather it reflects the entirety of staff's research and analysis as presented here. See below Notes for more information.

^{*}Denotes the seasonality of the species that could be affected directly or indirectly by project impacts.

⁺The Potential for Occurrence has been amalgamated from applicant's filings, staff's research, agency and other coordination and outreach, and other sources such as mentioned throughout this assessment.

^{**}BCC in Region 1 only.

STATUS CODES:

State

SSC: California Species of Special Concern. Species of concern to CDFW because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

SE: State listed as endangered

ST: State listed as threatened

SCE: State listed as candidate

SH: Possibly extirpated – Known from only historical records but still some hope of rediscovery. There is evidence that the species may no longer be present in the state, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.

FP: Fully protected

D: Delisted taxon that is considered recovered

SA: Special Animal. Species is tracked in the CNDDDB (due to rarity, limited distribution in California, declining throughout the range, etc.) but holds no other special status at the state or federal level.

WL: Watch List

Federal

FE: Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT: Federally listed, threatened: species likely to become endangered within the foreseeable future

BCC: Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities

BLM S: Bureau of Land Management sensitive species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act.

USFS S: United States Forest Service Sensitive Species: Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and trends in habitat capability that would reduce a species' existing distribution.

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area ^{*,+}
California Rare Plant Ranking (CRPR)		
1A Presumed extirpated in California and either rare or extinct elsewhere		
1B: Rare or endangered in California and elsewhere		
2A: Presumed extirpated in California but more common elsewhere		
2B: Rare or endangered in California but more common elsewhere		
3: Plants for which we need more information- Review list		
4: Plants of limited distribution – Watch list		
0.1: Seriously threatened in California (over 80 of occurrences threatened/high degree and immediacy of threat)		
0.2: Moderately threatened in California (20-80% of occurrence threatened/moderate degree and immediacy of threat)		
0.3: Not very threatened in California (<20% of occurrence threatened/low degree and immediacy of threats or no current threats known)		
Global Rank/State Rank		
Global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. Subspecies are denoted by a T-Rank; multiple rankings indicate a range of values		
G1 = Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations)., very steep declines or other factors.		
G2 = Imperiled - At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines or other factors.		
G3 = Vulnerable - At moderate risk of extinction due to very restricted range, relatively few populations (often 80 or fewer), recent and widespread declines or other factors.		
G4 = Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines other factors.		
G5 = Secure - Common; widespread and abundant.		
Variant Global Conservation Status Rank		
GU = Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.		
Intraspecific Taxon Global Conservation Status Rank		
T# - Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T rank.		
Global Rank Qualifier		
? = Inexact Numeric Rank – Denotes inexact numeric rank.		
Q = Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable.		

TABLE 5.2-1B KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL STATUS WILDLIFE

Common Name (<i>Scientific Name</i>) [±]	Status Fed/State/G-Rank/S- Rank/CDFW SSC, FP, Agency Sensitive, or WL	Potential for Occurrence in Project Impact Area ^{*+}
--	---	---

State rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain the imperilment status only within California's state boundaries

S1 = **Critically Imperiled** in state because of extreme rarity (often 5 or fewer populations) or because of other factors such as deep declines making it extremely vulnerable to extirpation from state.

S2 = **Imperiled** in the state because of rarity due to very restricted range, few populations (often 20 or fewer), steep declines, or other factors making vulnerable to extirpation from state.

S3 = **Vulnerable** in state due to restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

S4 = **Apparently secure** – Unknown but not rare in the state; some cause for long-term concern due to declines or other factors.

S5 = **Secure** – Common, widespread, and abundant in the state.

SNR = State Not Ranked

TABLE 5.2-2 POTENTIAL FOR SPECIAL STATUS NATURAL VEGETATION COMMUNITIES TO OCCUR

Common Name (Scientific Name)	Status G-Rank/S-Rank	Potential for Occurrence in Project Impact Area**
Alkali Seep	G3/S2.1	Not present; no seeps or springs are present in the project area.
Cismontane Alkali Marsh	G1/S1.1	Not present. No marshes are present in the BSA.
Coastal and Valley Freshwater Marsh	G3/S2.1	Not present. No marshes are present in the BSA.
Great Valley Cottonwood Riparian Forest	G2/S2.1	Not present. No riparian forests are present in the BSA.
Great Valley Mesquite Scrub	G1/S1.1	Not present. No riparian scrub is present in the BSA.
Monvero Residual Dunes	G1/S1.2	No interior dunes are present in the BSA.
North Central Coast Drainage Sacramento Sucker/Roach River	GNR/SNR	Not present. No rivers are present in the BSA.
Northern Claypan Vernal Pool	G1/S1.1	Not present. No vernal pools or wetlands are present in the BSA.
Northern Vernal Pool	G2/S2.1	No vernal pools or wetlands are present in the BSA.
Sycamore Alluvial Woodland	G1/S1.1	Not present. No gullies, intermittent streams, springs, seeps, stream banks, or terraces adjacent to floodplains that are subject to high intensity flooding.
Valley Needlegrass Grassland	G3/S3.1	Not present. No grassland exists, nor do associated species such as Pacific reedgrass (<i>Calamagrostis nutkaensis</i>), Festuca sp., and California oatgrass (<i>Danthonia californica</i>).
Valley Sacaton Grassland	G1/S1.1	Not present. No grassland exists, nor does habitat, e.g. moist, poorly drained, often alkaline areas along ephemeral, intermittent, or perennial streams, as well as alluvial flats, basins, swales, meadows, and margins of marshes and ponds.
Valley Saltbush Scrub	G2/S2.1	Not present. In the BSA, no scrub habitat exists that is comprised of the two dominant species: valley saltbush scrub, which is dominated by two species, spiny saltbush (<i>Atriplex spinifera</i>) and common saltbush (<i>Atriplex polycarpa</i>).
Fremont Cottonwood Woodland	G2Q/S3	Present in near Cantua Creek, which passes through the Cantua Substation study area. This community occurs outside the existing perimeter fence of the proposed work area for this substation.
Valley Sink Scrub	G1/S1.1	Not present. In the BSA, no scrub habitat exists that is found on the heavier clay soils with dominant shrubs iodinebush (<i>Allenrolfea occidentalis</i>) and seepweed (<i>Suaeda moquinii</i>).
Coastal and Valley Freshwater Marsh	S2.1	Not present. In the BSA, no freshwater marsh habitat was documented.

Global Rank/State Rank

Global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. Subspecies are denoted by a T-Rank; multiple rankings indicate a range of values

TABLE 5.2-2 POTENTIAL FOR SPECIAL STATUS NATURAL VEGETATION COMMUNITIES TO OCCUR

G1 = **Critically Imperiled** – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines or other factors.

G2 = **Imperiled**- At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines or other factors.

G3 = **Vulnerable** - At moderate risk of extinction due to very restricted range, relatively few populations (often 80 or fewer), recent and widespread declines or other factors.

G4 = **Apparently Secure**- Uncommon but not rare; some cause for long-term concern due to declines other factors.

G5 = **Secure**- Common; widespread and abundant.

Variant Global Conservation Status Rank

GU = **Unrankable** – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

Intraspecific Taxon Global Conservation Status Rank

T# - **Intraspecific Taxon (trinomial)** - The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T rank.

Global Rank Qualifier

? = **Inexact Numeric Rank** – Denotes inexact numeric rank.

Q = **Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable.

State rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain the imperilment status only within California’s state boundaries

S1 = **Critically Imperiled** in state because of extreme rarity (often 5 or fewer populations) or because of other factors such as deep declines making it extremely vulnerable to extirpation from state.

S2 = **Imperiled** in the state because of rarity due to very restricted range, few populations (often 20 or fewer) , steep declines , or other factors making vulnerable to extirpation from state.

S3 = **Vulnerable** in state due to restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

S4 = **Apparently secure** – Unknown but not rare in the state; some cause for long-term concern due to declines or other factors.

S5 = **Secure** – Common, widespread, and abundant in the state.

SNR = State Not Ranked

Special Status Plant Species

The CNDDDB and CNPS queries for the project site and vicinity identified numerous special status plant species known to occur in the region. These species were evaluated for potential to occur in the project site, including the jurisdictional and non-jurisdictional components of the project. Of these, many plant species require specialized habitats which are not present on the project site, or the project is outside the known elevation range for the species and therefore, are not likely to occur, and these species were eliminated from further review (refer to **Table 5.2-1A** for a list of species considered for this analysis. Species with a low to high potential, or known, to occur are described in further detail below. No special-status plant species were identified during surveys.

California androsace (*Androsace elongata* ssp. *acuta*)

An annual herb, this species grows in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. This species is highly localized and often overlooked. No CNDDDB records for this species resulted from the database query. Found at elevations from 490 to 4,280 feet. This species is not likely to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack suitable habitat. It has a low potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas for the PG&E downstream network upgrades.

Heartscale (*Atriplex cordulata* var. *cordulata*)

An annual herb, this species occurs in chenopod scrub, meadows and seeps, valley and foothill grassland. It is endemic to the Central Valley and it's found in the San Joaquin Valley, where it grows in area of saline and alkaline soils. This species prefers elevations from sea level up to 1,835 feet. One historic (1993) CNDDDB record, is located in the Kerman Ecological Reserve, approximately 20 miles northeast of the northern end of the Scenario 1 Fiber Line study area for the PG&E downstream network upgrades (CNDDDB 2024). This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat. It has a low potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas.

Crownscale (*Atriplex coronata* var. *coronata*)

An annual herb, this California-endemic species occurs in chenopod scrub, valley and foothill grassland, and vernal pools. May be found in fine alkaline or clay soils, at elevations from 5 to 1,935 feet. No CNDDDB 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 Fiber Line study area for the PG&E downstream network upgrades on the west side of I-5. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat.

Lost Hills crownscale (*Atriplex coronata* var. *vallicola*)

Lost Hills crownscale is an annual herb that occurs in alkaline soils in chenopod scrub, valley and foothills grasslands, and vernal pools at elevations between 165 and 2,085 feet throughout the San Joaquin Valley. This species usually occurs in wetlands, and occasionally in non-wetlands on alkaline soils (Calflora 2023, CNPS 2023). The plant species most frequently associated with Lost Hills crownscale as spiny saltbush (*Atriplex spinifera*), common saltbush (*Atriplex polycarpa*), seepweed (*Suaeda moquinii*), and grasses such as red brome (*Bromus madritensis* spp *rubens*), and annual fescue (*Vulpia microstachys*) (CSU Stanislaus 2023).

The nearest occurrences documented in the CNDDDB include Occurrence No. 45, in the Lillis Ranch topographic quadrangle, approximately 0.57 miles northwest of the proposed PG&E utility switchyard, detected in 2001, and Occurrence No. 49, also in the Lillis Ranch topographic quadrangle, approximately 0.54 miles west of the proposed PG&E utility switchyard and the western terminus of the gen-tie line corridor, documented in 2002 (CNDDDB 2024).

The nearest location of potential grassland habitat is located outside the project area along the western boundary near the proposed PG&E utility switchyard (RCI 2024u). The entire project site, including the jurisdictional components and the PG&E utility switchyard have been subject to ongoing agricultural disturbance (RCI 2023rr). Specifically, habitat within the gen-tie line corridor has been continually disturbed by agricultural activities since at least July 2004 through July 2020 (RCI 2023rr). In addition, the previously mentioned plant associate species do not occur within the gen-tie corridor or at the PG&E utility switchyard parcel (RCI 2023rr). Therefore, this species has a low potential to occur on the project site, including the jurisdictional components and PG&E utility switchyard but was not detected during surveys. In addition, this species has a low potential to occur along the PG&E downstream network upgrades, where there may be suitable habitat along the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas (RCI 2024cc).

Brittlescale (*Atriplex depressa*)

An annual herb, it occurs in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. This species prefers alkaline, clay soils, and prefers elevations of 5 to 1,050 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat. It has a low potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas for the PG&E downstream network upgrades.

Lesser saltscale (*Atriplex minuscula*)

An annual herb, this species occurs in chenopod scrub, playas, valley and foothill grassland. Prefers sandy, alkaline soils, and elevations of 50 to 655 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat. Only four historical

(greater than 30 years old) CNDDDB 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 Fiber Line study area for the PG&E downstream network upgrades and has a low potential to occur. This species is not expected to occur in the Scenario 2 Fiber Line study area, or in the substation study areas due to the lack of suitable habitat.

Subtle orache (*Atriplex subtilis*)

An annual herb, this species occurs in valley and foothill grassland in alkaline soils, where it prefers elevations of 130 to 330 feet. The three historical (more than 30 years old) CNDDDB 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 Fiber Line study area for the PG&E downstream network upgrades) or extirpated. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. It has a low potential to occur in the Scenario 1 Fiber Line and Scenario 1 Fiber Line 3 study areas for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

California jewelflower (*Caulanthus californicus*)

An annual herb, this species can be found in chenopod scrub, pinyon and juniper woodland, valley and foothill grassland in sandy soils. This species prefers elevations of 200 to 3,280 feet. Results of the CNDDDB 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. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat. It has a low potential to occur in the Scenario 1 Fiber Line and 3 study areas for the PG&E downstream network upgrades. No suitable habitat is present for this species in the Scenario 2 Fiber Line study area or the substation study areas, which are dominated by agriculture and developed land cover.

Lemmon's jewelflower (*Caulanthus lemmonii*)

An annual endemic herb which may be found in pinyon and juniper woodland, and valley and foothill grassland, at elevations of 260 to 5,185 feet. Prefers soils which are rocky-clay, serpentine, or shale soils. Only one historical (1962) CNDDDB record resulted from the database query, mapped as a best guess around Avenal, approximately 9 miles south of the existing Gates Substation. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat. It has a low potential to occur in the Scenario 1 Fiber Line and 3 study areas for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

Small-flowered morning-glory (*Convolvulus simulans*)

An annual herb which may be found in chaparral, coastal scrub, valley and foothill, grassland in clay, seeps, and serpentinite. Found at elevations from 100 to 2,430 feet. No CNDDDB records for this species resulted from the database query however there are numerous records in CNPS record in the Tumey Hills west of the project. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat. It has a low potential to occur in the Scenario 1 Fiber Line and 3 study areas for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

Recurved Larkspur (*Delphinium recurvatum*)

This species, a perennial herb, is endemic to California, where most of its historical range is in the Central Valley. The grasslands of the valley have been mostly claimed for development and agriculture, so this species is now uncommon. Prefers poorly drained, fine, alkaline soils in grassland or Atriplex scrub, and elevations of 10 to 2,590 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to the lack of suitable habitat. Hundreds of plants were documented in CNDDDB (2024), in alkali grassland and saltbush scrub, west of the proposed Scenario 2 Fiber Line study area for the PG&E downstream network upgrades. It has a low potential to occur in the Scenario 1 Fiber Line to Scenario 3 Fiber Line study areas. This species is not expected to occur in the substation study areas due to the lack of suitable habitat.

Elegant wild buckwheat (*Eriogonum elegans*)

An annual herb, this species is found in cismontane woodland, valley and foothill grassland, usually in sandy or gravelly substrates; often in washes, sometimes roadsides. Occurrences are at elevations from 655 to 5,005 feet. There is no suitable grassland habitat within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. There is marginally suitable grassland habitat is present in the Scenario 3 Fiber Line study area where this species has a low potential to occur.

Cottony buckwheat (*Eriogonum gossypinum*)

An annual herb, this species is found in chenopod scrub, valley and foothill grassland in clay soil. Occurrences are at elevations from 330 to 1,805 feet. There is no does suitable habitat within or adjacent to the project site, including the jurisdictional components or PG&E utility switchyard. There is marginally suitable grassland habitat is present in the Scenario 3 Fiber Line study area.

San Benito poppy (*Eschscholzia hypaeoides*)

An annual herb, this species occurs in grassland slopes, oak woodlands, and chaparral. Occurrences are at elevations from 656 to 5,249 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. There is potentially suitable grassland habitat with washes present in the Scenario 1 Fiber Line and Scenario 3 study areas for the PG&E downstream network upgrades. No CNDDDB 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 fiber optic route Scenario 3 study area (CNPS 2024). As a result, this species has low potential to occur in the Scenario 1 Fiber Line study area and moderate potential to occur in the Scenario 3 Fiber Line study area grassland habitats, particularly along washes. It is not expected to occur in the Scenario 2 Fiber Line study area or substation study areas.

San Joaquin spearscale (*Extriplex joaquinana*)

An annual herb, this species occurs in chenopod scrub, meadows and seeps, playas, valley and foothill grassland. May also be found in seasonal alkali wetlands or alkali sink scrub with associate species such as *Distichlis spicata*, *Frankenia* sp, etc. Occurs at elevations of 5 to 2,740 feet. Only two CNDDDB records resulted from the database query, both located approximately 7 miles southwest of the PG&E utility switchyard in an area along Cantua Creek above 1,400 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has low potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

Stinkbells (*Fritillaria agrestis*)

A perennial bulbiferous herb, this species occurs in chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. It sometimes is found on serpentine areas, however, is mostly found in non-native grassland or in grassy openings in clay soil. Occurs at elevations from 35 to 5100 feet. Only one CNDDDB records resulted from the database query (1991), located on Joaquin Ridge (CNDDDB 2024). This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

Golden goodmania (*Goodmania luteola*)

This annual herb occurs in meadows and seeps, Mojavean desert scrub, playas, valley and foothill grassland. It typically prefers alkaline or clay soils, and elevations of 65 to 7,220 feet. No CNDDDB records and only two historical CNPS records (1937) of this species resulted from the database query located over 10 miles northeast of the PG&E utility switchyard near Kerman, California. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. Marginally suitable grassland habitat is present in the Scenario 1 Fiber Line and Scenario 3 study areas for the PG&E downstream network upgrades. As a result, this species has a low potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas and is not expected to occur in the Scenario 2 Fiber Line study area or four substation study areas.

Munz's tidy-tips (*Layia munzii*)

An annual endemic herb, this species occurs in chenopod scrub, valley and foothill grassland. Found on hillsides, in white-grey alkaline clay soils, with grasses and chenopod scrub associate species. Prefers elevations of 490 to 2,295 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. Extant occurrences near the Fresno Slough north of the project are over 5 miles away and noted as "Needs Fieldwork" (Occurrence #19), and Occurrence #4 is approximately 6 miles east. Therefore, this species has a low potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

Panoche pepper-grass (*Lepidium jaredii* ssp. *album*)

This annual herb occurs in valley and foothill grassland, on white or grey clay lenses on steep slopes. May also occur in alluvial fans and washes containing clay and gypsum-rich soils. Prefers elevations of 605 to 2445 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. All CNDDDB 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 Fiber Line study area for the PG&E downstream network upgrades. This species is not expected to occur in the Scenario 2 Fiber Line study area or in the substation study areas due to the lack of suitable habitat.

Serpentine leptosiphon (*Leptosiphon ambiguous*)

An annual herb which occurs in cismontane woodland, coastal scrub, and valley and foothill grassland. Prefers grassy areas on serpentine soil, with elevations of 395 to 3,710 feet. No CNDDDB records of this species resulted from the database query. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. However, multiple recent CNPS records are

located at high elevation west of Joaquin Rocks over 10 miles west of the Scenario 3 Fiber Line study area for the PG&E downstream network upgrades. 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.

Showy golden madia (*Madia radiata*)

This annual, California-endemic herb occurs in foothill woodland and valley grassland, at elevations of 80 to 3985 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has low potential to occur in portions of the Scenario 1 Fiber Line 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 Fiber Line study area or substation study areas due to the lack of suitable habitat.

Indian Valley bush-mallow (*Malacothamnus aboriginum*)

This perennial deciduous shrub is endemic to the southern Coastal Ranges of California, primarily in the southern half of the Diablo Range. It is found in chaparral, cismontane woodland on granitic outcrops and sandy bare soil, often in disturbed soils. It is found at elevations from 490 to 5,580 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. It has a low potential to occur within the study area of Scenario 1 Fiber Line and 2 study areas for the PG&E downstream network upgrades.

Sylvan microseris (*Microseris sylvatica*)

This perennial herb occurs in chaparral, cismontane woodland, great basin scrub, pinyon and juniper woodland, valley and foothill grassland, in elevations of 150 to 4,920 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. No CNDDDB records and only one CNPS quad record of this species (in the Joaquin Rocks quad at high elevation west of the Scenario 3 Fiber Line study area for the PG&E downstream network upgrades) resulted from the database query. The next closest CNPS records are located further to the west in San Benito County at high elevation. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has low potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas and is not expected to occur in the Scenario 2 study area or substation study areas.

San Joaquin woollythreads (*Monolopia congdonii*)

This annual herb can be found in chenopod scrub, and valley and foothill grassland, on alkaline or loamy plains with sandy soils. Prefers elevations of 195 to 2,625 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. Suitable grassland habitat is not present in the Scenario 2 Fiber Line study area or the substation study areas for the PG&E

downstream network upgrades. The closest CNDDDB records to the Scenario 1 Fiber Line 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 Fiber Line study area or the substation study areas due to the lack of suitable habitat.

Shining navarretia (*Navarretia nigelliformis* ssp. *radians*)

This annual herb occurs in cismontane woodland, valley and foothill grassland, and vernal pools, in clary, silty clay loam, or loam. Prefers elevations of 215 to 3280 feet. Only one CNDDDB record (2016) resulted from the database query, located approximately 8 miles west of the PG&E utility switchyard along Cantua Creek above 1,600 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has low potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas where suitable grassland habitat is present. This species is not expected to occur in the Scenario 2 Fiber Line study area or in the substation study areas due to the lack of suitable habitat.

Prostrate vernal pool navarretia (*Navarretia prostrata*)

An annual herb, this species prefers coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. May be found in alkaline soils in grassland, or in vernal pools with mesic (moist), alkaline soils. Prefers elevations of 10 to 3970 feet. All CNDDDB records from the database query are located over 5 miles southwest of the Scenario 3 Fiber Line study area above 3,000 feet. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has low potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas where suitable grassland habitat with mesic soils is present. This species is not expected to occur in the Scenario 2 Fiber Line study area or in the substation study areas due to the lack of suitable habitat.

Chaparral ragwort (*Senecio aphanactis*)

An annual herb, this species occurs in chaparral, cismontane woodland, and coastal scrub. Prefers drying alkaline flats at elevations of 50 to 2625 feet. Most CNDDDB records from the database query results occur in the hills west of the three alternative fiber line study areas for the PG&E downstream network upgrades, some of which are documented in annual grassland with clay, alkaline soils along drainages. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. There is a low potential for this species to occur in drainages and washes with clay or alkaline soils that intersect the Scenario 1 Fiber Line and Scenario 3 study areas in the undeveloped eastern edge of the Big Blue Hills and Ciervo Hills. This species is not expected to occur in the Fiber Line Scenario 2 study area or in the substation study areas due to the lack of suitable habitat.

San Joaquin bluecurls (*Trichostema ovatum*)

An annual herb, this species occurs in chenopod scrub, and valley and foothill grassland. Prefers sandy alluvial soils of grasslands and disturbed sites. This species may be found at elevations of 215 to 1,050 feet. No CNDDDB records for this species resulted from the database query. Multiple recent CNPS records are from one location in the Ciervo Hills northwest of the Scenario 1 Fiber Line study area above Panoche Creek. This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. This species has low potential to occur in the Scenario 1 Fiber Line 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.

Special Status Wildlife Species

Crotch's bumble bee (*Bombus crotchii*)

Crotch's bumble bee does not have federal listing status but is currently designated as a candidate species under the CESA. As a candidate species, it receives the same protections as if it were listed as threatened or endangered until the California Fish and Game Commission makes a final determination on its status.

The Crotch's bumble bee, once widespread in California's Central Valley, is now absent from much of its historic range. Its current range is estimated at 144,000 km², with a nearly 98% decline in relative abundance over the past decade (Los Padres Forest Watch 2023). Ongoing threats to the species include habitat conversion, pesticide use, disease from managed bees, and other factors such as invasive species (Xerces 2018). Due to factors such as habitat loss, extensive agricultural activities, and use of pesticides in the Central Valley, this species now appears to be absent from most of its historic range (Xerces 2025).

The Crotch's bumble bee inhabits diverse environments, including grasslands, shrublands, chaparral, desert margins, and semi-urban areas. As generalists, they utilize a wide range of plants for nectar, including *Antirrhinum*, *Asclepias*, *Chaenactis*, *Clarkia*, *Dendromecon*, *Eschscholzia*, *Eriogonum*, *Lupinus*, *Medicago*, *Phacelia*, *Salvia* (Williams et al 2014). This species nests in underground abandoned rodent nests, tufts of grass, old bird nests, rock piles, or cavities of dead trees.

As previously discussed the project site dominated by active and seasonally managed non-active agricultural fields. Biological reconnaissance surveys conducted in 2022-2023 documented tomato and garlic were grown as crops, while non-active parcels were overgrown with black mustard (*Brassica nigra*) before being disked in May 2023. Other observed plant species included bread wheat (*Triticum aestivum*), great valley phacelia (*Phacelia ciliata*), and field bindweed (*Convolvulus arvensis*). While great valley phacelia was observed, its specific location was not documented, and given the regular field agricultural practices, it is likely that much of the area was disked.

Overall, the project site is unsuitable for the species and unlikely to contain native plant species commonly used as nectar or food sources by Crotch's bumble bee due to regular disking activities, which could also prevent or disrupt underground nesting. However, this species can forage up to 6.2 miles from their nest sites to use nectar food sources and may occur immediately off site and pass through the site while foraging. Crotch's bumblebee was not detected during surveys however focused surveys were not conducted by the applicant of the project site, including the jurisdictional components and the PG&E switchyard. The closest known occurrence is located approximately 2.1 miles southeast of the proposed solar facility and dates from 1964. There is another known sighting of Crotch's bumble bee, found in 1963, located approximately 4.4 miles south of the gen-tie line corridor, adjacent the fiber line route for the PG&E downstream network upgrades (CNDDDB 2024). For the PG&E downstream network upgrades, no surveys were conducted by the applicant, and no incidental observations were made. Therefore, this species has a low potential to occur on or near the project site, excluding the PG&E utility switchyard (non-jurisdictional component). For the PG&E downstream network upgrades, this species not expected to occur in the alternative fiber line study area or substation study areas.

California Tiger Salamander (*Ambystoma californiense*)

The California tiger salamander, an endemic species to central California, inhabits vernal pool complexes in Santa Barbara and Sonoma Counties, in the Central Valley from Colusa County south to Kern County and in coast ranges from the San Francisco Bay area south to the Temblor Range. Over half of their historic breeding sites have been lost. Their habitat has two distinct components which include vernal pool and seasonal ponds for spawning and upland areas with burrow complexes as shelter and refuge during the dry summer months and periods of inactivity. While rain pools used for spawning are the most obvious and best-known habitat for the species, the presence of burrow complexes of California ground squirrel and Botta's pocket gopher in grasslands and sparse oak woodlands is far more important for the survival of individuals and colonies.

This species spends about 80 to 90 percent of the year in mammal burrows which protect them from desiccation during the hot, dry summer. They emerge on rainy nights in autumn and winter to migrate to spawning pools filled by winter rains. Females lay eggs singly or in small clusters on submerged plants, which hatch within days. After spawning, adults return to their burrows, staying underground until the next rainy season. Larvae, which feed on various aquatic invertebrates and amphibian larvae, metamorphose in late spring before the pool dry out. Adults primarily eat terrestrial invertebrates and sometimes small vertebrates (NatureServe 2008).

There are no California tiger salamander occurrences within 10 miles of the project survey area for the jurisdictional components and PG&E utility switchyard, and none were identified during applicant's surveys. There is marginally suitable habitat and

marginal aquatic habitat are present in the vicinity of the project however no potential habitat is present on site, including the jurisdictional components and PG&E utility switchyard and this species has a low potential to occur. For the PG&E downstream network upgrades, annual grassland occurs along the western edge of the Ciervo Hills and Big Blue Hills in the Scenario 1 Fiber Line and Scenario 3 study areas. These areas lack suitable aquatic habitat for the species, with only small, intermittent, and isolated seasonal impoundments in the annual grassland in the Ciervo Hills and Big Blue Hills. There is no other ponded water occurring within California tiger salamander dispersal range (RCI 2024cc). No CNDDDB occurrences have been recorded within 10 miles of these areas or on the eastern edge of the Ciervo and Big Blue Hills. Therefore, the potential for the species to occur in these study areas is low.

California glossy snake (*Arizona elegans occidentalis*)

This species is a generalist in habitat preference and has been reported from a range of scrub and grassland habitats, often with loose or sandy soils. 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. Suitable scrub and grasslands habitat does not occur within or adjacent to solar facility and other jurisdictional components or PG&E utility switchyard.

For the PG&E downstream network upgrades, potentially suitable scrub and grassland habitat exists within the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. The most recent CNDDDB occurrence was recorded in 2015, about 0.1 mile east of Scenario 3 Fiber Line study area near Coalinga Road and I-5. This species has a high potential to occur in these study areas. It has no potential to occur in the Scenario 2 Fiber Line study area and in the substation areas due to the lack of suitable scrub and grassland habitat in those locations.

San Joaquin coachwhip (*Masticophis flagellum ruddocki*)

This subspecies is a species of special concern by the state of California (and endemic to California). Its range extends from Arbuckle in the Sacramento Valley in Colusa County southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges, and an isolated population occurs in the Sutter Buttes. It is found at elevations from 66 feet to around 2,953 feet (CDFW 2000). San Joaquin coachwhip occurs in open, dry, treeless areas, including grassland and saltbush scrub, taking refuge in rodent burrows, under shaded vegetation, and under surface objects (CalHerps 2023). It is found in a variety of other habitats, including desert, chaparral, and pasture (CDFW 2000). San Joaquin coachwhip presumably mates in May and lays eggs in early summer. Coachwhips are probably preyed upon by roadrunners and birds of prey (CDFW 2000). This species eats small mammals including bats, nestling and adult birds, bird eggs, lizards, snakes, amphibians, and carrion. Hatchlings and juveniles will eat large invertebrates (CalHerps 2023).

This species is not expected to occur on the project site, specifically the jurisdictional components. There is an area of suitable open dry habitat with nearby ground squirrel burrows west of the PG&E utility switchyard and adjacent to the project site. This species has moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas in areas of potentially suitable scrub and grassland habitat with little or no trees.

Blunt-nosed leopard lizard (*Gambelia sila*)

Blunt-nosed leopard lizards occur in the San Joaquin Valley region in expansive, arid areas with scattered vegetation where it inhabits non-native grassland and alkali sink scrub communities. In the foothills they occur in chenopod community which is associated with non-alkaline, and sandy soils. They prey primarily on insects. This lizard uses small mammal burrows, including ground squirrel and kangaroo rat tunnels, for permanent shelter and dormancy. It also creates shallow tunnels under exposed rocks or earth berms for temporary or permanent shelter when small mammal burrows are scarce.

Suitable scrub and grassland habitat does not occur within or adjacent to solar facility and other jurisdictional components. Most of the project site is unsuitable for blunt nosed leopard lizard due to past and current agricultural practices, including irrigation and disking however, it this species is known to occur in the project vicinity, west of I-5. Populations have been documented in the Ciervo Hills, which are part of the species' current range (iNaturalist 2025). For the PG&E utility switchyard, blunt-nosed leopard lizard may occur in the westernmost portion of the 159-acre switchyard project site. There is habitat where this species has a low potential to occur in the undeveloped lands west of the switchyard parcel. Based on the opt-in application these areas are characterized by high topographic relief, dense vegetation, a lack of bare ground, and an absence of shrubs or other vegetation for shade or cover According to the applicant, these conditions make the presence of the species unlikely (RCI 2024u). However, staff has determined that the blunt-nosed leopard lizard as this species has a low potential to occur within the switchyard parcel due to the marginally suitable habitat nearby. Due to the lack of suitable foraging habitat and shrub cover within the switchyard itself, the species is likely to occur only as a transient from adjacent habitat.

For the PG&E downstream network upgrades study areas, including Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. The species is not expected to occur in the Scenario 2 Fiber Line study area or substation study areas as these 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.

Coast horned lizard (*Phrynosoma blainvillii*)

This species 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. Suitable habitat with sandy soils does not occur within or adjacent to solar facility and other jurisdictional components or near the PG&E utility switchyard project area. The closest two CNDDDB records for this species are from 1986 in the Monvero Residual Dunes of the Ciervo Hills, approximately 5 miles west of the Scenario 1 Fiber Line study area for the PG&E downstream network upgrades. This species has moderate potential to occur in the Scenario 1 Fiber Line 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 Fiber Line and Scenario 3 study areas. This species is not expected to occur in the Scenario 2 Fiber Line 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.

Tricolored blackbird (*Agelaius tricolor*) nesting colony

Tricolored blackbirds occur throughout California, but this species has been extirpated as a breeder in coastal locations and persists in small numbers at scattered sites in southern California. This species nests in dense, tall vegetation near water, preferring freshwater marshes with cattails and tule, riparian areas with willows and blackberries, and agricultural fields like silage crops as well as fields with invasive mustard or mallow plants. They have also been found to nest in patches of Himalayan blackberry near stock ponds or irrigated pastures in the foothills of the Sierra Nevada. Foraging habitats include cultivated fields, feedlots associated with dairy farms, irrigation ditches and wetlands. Tricolored blackbirds exhibit low site fidelity, often selecting new nesting locations each breeding season based on the availability of suitable habitat and food resources (Airola et al., 2016, pp. 104-105). A CNDDDB record from 1907 overlaps the eastern portion of the project site, within the solar field. This record notes that a colony of birds was observed in a patch of nettles growing in a low, damp sink at the end of an abandoned slough, with a dense fringe of willows on two side (CNDDDB 2024).

The opt-in application lists the tricolored blackbird as having a low potential for foraging, as the project site primarily consists of low-quality foraging habitat, which includes disked, barren, non-irrigated fields within the project area for the proposed solar facility and other jurisdictional components (RCI 2023w). In addition, the applicant concluded that suitable cover for a nesting colony does not occur within the solar facility and other jurisdictional components or PG&E utility switchyard (RCI 2024u). This species was not detected during surveys. However, staff determined that there is a low potential for nesting and suitable nesting cover for a tricolored blackbird colony may be present within or near the site, particularly in agricultural areas. These areas include irrigation ditches and man-made basins which may provide adequate nesting habitat, such as willow, tule, and other riparian vegetation, including Basin 12,

and possibly Basin 16, identified in the aquatic resources delineation (IP 2024q). In addition, based on staff's review of Figures 5.2-5a through Figure 5.2-5h, included in Section 5.2 Land Use of the opt-application there are foraging opportunities in the project vicinity, including areas which grow grain and hay crops as well as may forage in field crops, such as wheat (RCI 2023nn). These figures provide an overview of agricultural uses within the study area which include areas within one mile of the project site, including jurisdictional components and the PG&E utility switchyard, and a 0.25-mile buffer for proposed linear facilities (gen-tie line corridor). Therefore, while there are no current records for the species, there is the potential for the species to occur if nesting and foraging conditions are favorable.

This species is not expected to nest or forage within the project area for the PG&E utility switchyard due to lack of suitable nesting or foraging habitat. For the PG&E downstream network upgrades, there is moderate potential for this species to forage within Scenario 1 Fiber Line through Fiber Line Scenario study areas as well as at a portion of the Cantua substation study area, and low potential to nest at these specific areas.

Short-eared owl (*Asio flammeus*)

Short-eared owls are typically found in open country and typically may be viewed at dusk or dawn in fields, grasslands, meadows, or even airports. Found in swamp lands, both fresh and salt, lowland meadows, and irrigated alfalfa fields, and they seem to prefer tule patches or tall grasses for nesting and cover. This species nests on dry ground in depressions concealed in vegetation. Suitable foraging habitat does not occur within or adjacent to solar facility and other jurisdictional components or in the PG&E utility switchyard project area. Two CNDDDB records exist east of Scenario 1 Fiber Line study area, approximately 1,300 feet or less from the study area. Therefore, this species has a moderate potential to occur in Scenario 1 Fiber Line study area.

Golden eagle (*Aquila chrysaetos*)

Most golden eagles in California are resident living in a range of habitats such as forests, canyons, shrublands, grasslands, and oak woodlands (CDFW 2025). They breed from late January through August with nests constructed on platforms on steep cliffs or in large trees. The main prey species are rabbits, hares and rodents but will also take other mammals, birds, and reptiles.

This species is known to occur in the project area and was observed flying over the solar facility site during surveys on May 11, 2023 (RCI 2023w). There is suitable foraging habitat throughout the project site, including the jurisdictional components and near the PG&E utility switchyard. Similarly, this species has high potential to forage in the study areas for the PG&E downstream network upgrades, including the Fiber Line Scenarios 1 to 3 as well as the Cantua Substation as these areas 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.

Burrowing Owl (*Athene cunicularia*)

Burrowing owl does not have federal listing status but is currently designated as a candidate species under the CESA. As a candidate species, it receives the same protections as if it were listed as threatened or endangered until the California Fish and Game Commission makes a final determination on its status.

Burrowing owls are year-round residents throughout much of California occurring in open, dry grassland, and desert habitats and in forb and open shrub stages of pinyon juniper and ponderosa pine habitats. Breeding season is March to August but can begin as early as February and extend into December. Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by California ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong fidelity for previously occupied nesting and wintering habitats and often return to burrows used in previous years, especially if they were successful at reproducing there in previous years (Gervais et al. 2008).

This species is known to occur in the project area, including areas proposed for the solar facility, BESS, step-up substation, and along the portion of the gen-tie line corridor located within the solar facility field. Burrowing owls were detected during reconnaissance surveys conducted in December 2022 and March 30, 2023 (RCI 2023rr) and during the site inspections conducted from February and June 2023 (RCI 2023rr). The applicant conducted non-breeding season surveys starting in November 2024 through January 2025 (IP 2024s). Burrowing owls were observed in larger irrigation ditches, at the ends of irrigation piping, and along the edges of dirt roads. Eight individuals were observed on the project site for the jurisdictional components, specifically solar facility location and a pair associated with a burrow found within a trash pile near the southwest corner of the proposed solar facility.

The applicant documented four burrowing owls within the proposed solar facility in or on pipes on the western, southeastern, and southern boundaries, one near the corner of West Cerini Avenue and South Yuba Avenue, one near a known burrow on the corner of South Butte Avenue and West Cerini Avenue, and another near the corner of West Elkhorn Avenue and South Colusa Avenue near a large burrow (IP 2024p). The applicant identified 17 burrows with recent burrowing owl sign (i.e., whitewash, pellets, feathers) and identified an additional 5 burrows with older burrowing owl sign within the survey area for the jurisdictional components and PG&E utility switchyard. All burrowing owl or their sign documented during surveys were located within the solar facility project area, either where the PV array would be constructed or along the perimeter. These burrows were primarily on the outer edges of the site as a result of historical and ongoing disking activities, which have created berms/ditches with friable soil. Staff observed a single burrowing owl on the southern perimeter of the solar facility project area during the site visit in October 2024.

This species was not detected in the PG&E utility switchyard project area. This species has a low potential for the species to occur due to the presence of the orchard which limits habitat for their burrows and for prey species (RCI 2023rr).

For the PG&E downstream network upgrades, this species has high potential to nest and forage in the study areas for the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 fiber lines and the Cantua Substation. It is not expected to occur in the study areas for the Los Banos, Midway, or Gates Substation due to the lack of suitable nesting and foraging habitat.

Ferruginous hawk (*Buteo regalis*)

Ferruginous hawks are open-country birds that breed in grasslands, sagebrush, saltbush-greasewood shrublands, and edges of pinyon-juniper forests at low to moderate elevations. Breeding habitat includes features such as cliffs, outcrops, and tree groves for nesting. They spend winter in grasslands or deserts with abundant rabbits, pocket gophers, or prairie dogs but also in agricultural country, including over plowed fields and utilize lone trees, fence posts, powerline poles, and rocky outcrops to perch and wait for prey. This species is a winter resident in California from August to early March.

This species is known to occur on the project site and a ferruginous hawk was observed actively foraging outside the survey area near the northeast side of the proposed solar facility location on December 16, 2022 (RCI 2023rr). There is suitable foraging habitat (agricultural fields) within and around the project site, including the jurisdictional components. It is not likely to forage in the PG&E utility switchyard project area but may forage nearby.

For the PG&E downstream network upgrades, it has a high potential to forage in the study areas for the Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line and the Cantua Substation. Therefore, this species is known or expected to occur in these project locations. 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.

Swainson's hawk (*Buteo swainsoni*)

Swainson's hawk require large areas of open landscape for foraging such as grasslands and agricultural lands that provide low-growing vegetation for hunting and high rodent prey populations such as ground squirrels, gophers, mice, voles, and rabbits. They will also eat bats, snakes, lizards, and birds. This species typically nests in large solitary tree or in a small grove of trees such as valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), walnut (*Juglans hindsii*), and willow (*Salix* spp.), and occasionally in non-native trees, such as eucalyptus (*Eucalyptus* spp.). These nests are found within riparian woodlands, along roadsides, trees along field borders, isolated trees, small groves, and on the edges of remnant oak woodlands (CDFG 1993). Currently, the most significant threat to the remaining Swainson's hawk

population in California is habitat loss due to residential and commercial development is (CDFG 1993).

During surveys of the project site in 2023, including the jurisdictional components and PG&E utility switchyard, five active Swainson's hawk nests were detected on site (RCI 2023w; RCI 2023tt). There are approximately 30 suitable nest trees present within the proposed solar facility area. There is suitable nesting habitat in the solar facility, BESS, step-up substation, and gen-tie line corridor project areas. There is suitable foraging habitat present within active and retired and managed agricultural lands found within entire project site, including the jurisdictional components. This species is not expected to forage within the PG&E utility switchyard, but may forage in suitable grasslands adjacent to the site. Per the applicant, this agricultural land is characterized as "medium quality" foraging habitat (IP 2024p). This species was documented foraging in the solar facility footprint during surveys (IP 2024p).

For the PG&E downstream network upgrades, there are agricultural fields suitable for foraging occur in the Scenario 1 Fiber Line, 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. Agricultural areas in the Scenario 1 Fiber Line, 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 Fiber Line study area and the Los Banos, Midway, and Gates Substations study areas due to the lack of suitable nest trees.

Surveys conducted for this part of the project documented Fremont cottonwood in Cantua Creek adjacent to (but outside of) the Cantua Substation study area which could potentially support nesting. There are one or two cottonwood trees are present in Cantua Creek where it intersects the Fiber Scenario 2 fiber optic study area. There are potentially suitable riparian nest trees in Los Gatos Creek where it intersects the Scenario 2 Fiber Line and Scenario 3 fiber optic study areas.

Northern harrier (*Circus hudsonius*)

Northern harriers are found in a range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes. This species feeds mostly on voles, small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish. During the breeding season they are most commonly found in large undisturbed tracts of wetlands and grasslands with low, thick vegetation where they nest on the ground and is usually a dense clump of vegetation such as willows, grasses, sedges, reeds, bulrushes, and cattails.

An adult male northern harrier was documented foraging in the solar facility location within project survey area during a site visit conducted on April 5, 2023 (RCI 2023rr). There is suitable foraging habitat present within active and retired and managed

agricultural lands found within entire project site, including the jurisdictional components and PG&E utility switchyard. There is no suitable nesting habitat in the solar facility, BESS, step-up substation, or gen-tie line corridor project areas. In addition, there is no nesting habitat within the PG&E utility switchyard.

For the PG&E downstream network upgrades, this species has high potential to forage in the agricultural area and/or grassland areas in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. Grassland areas within the Scenario 1 Fiber Line 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 Fiber Line, 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.

Mountain plover (*Charadrius montanus*)

Mountain plover occur in short grasslands and plowed fields of the Central Valley from Sutter and Yuba counties southward. Also found in foothill valleys west of San Joaquin Valley, Imperial Valley, plowed fields of Los Angeles and western San Bernardino counties, and along the central Colorado river valley. This species is not known to breed in California and instead is present as a winter migrant. It forages among open grasslands, plowed fields with little vegetation, and open sagebrush areas and often roosts in depressions such as ungulate hoof prints and plow furrows (Knopf and Rupert 1995).

Suitable habitat occurs on the project site, including the jurisdictional components. Mountain plover were observed throughout the project site during the reconnaissance surveys in December 2022 and again site visit in February 2023 (RCI 2023rr). There is suitable habitat across the most northern portion of the site in freshly disked/flooded agricultural fields where these flocks were observed (RCI 2023rr). It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable habitat.

For the PG&E downstream network upgrades, agricultural fields suitable for foraging occur in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas. Additionally, this species is expected to forage in the portion of the Cantua Substation study area with agricultural land cover. This species is not expected to forage in the Los Banos, Midway, or Gates Substations study areas due to a lack of suitable foraging habitat.

White-tailed kite (*Elanus leucurus*) *nesting

White-tailed kites are common in savannas, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields. This species is a yearlong

resident in coastal and valley lowlands, especially in agricultural areas. Nests near tops of oak, willow, or other tree stand that are located near open foraging areas.

Suitable foraging habitat occurs on the project site, including the jurisdictional components. This species was observed foraging along a canal during surveys within the solar facility. This species was not observed nesting however there are suitable nest trees present on the project site. Suitable nest trees are also present within 0.5 mile of the project site, although this species has not been documented to nest in the area (RCI 2023rr). It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable habitat. For the PG&E downstream network upgrades, the species has high potential to forage in suitable agricultural land which occur in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas, and the Cantua Substation study area. 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.

California horned lark (*Eremophila alpestris actia*)

California horned lark is a resident throughout the coast range area of California from Humboldt County southward to Baja California and in the San Joaquin Valley. Prefer bare dry ground and areas of short, sparse vegetation. Common habitats include prairies, deserts, tundra, beaches, dunes, and heavily grazed pastures. They also occur in areas cleared by humans, such as plowed fields and mowed expanses around airstrips.

This species is known to occur, and California horned lark were observed during surveys of the solar facility (RCI 2023w). Suitable foraging and nesting habitat occurs in the project site, including for the jurisdictional components such at the solar facility, BESS, step-up substation, and gen-tie corridor. It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable habitat but may forage nearby.

For the PG&E downstream network upgrades, there is suitable agricultural fields for foraging and open bare ground for nesting at the margins of agricultural fields and groves in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 study areas and the Cantua Substation study area. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas, which lack suitable foraging or nesting habitat.

Merlin (*Falco columbarius*)

This species is typically found on seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, or farms and ranches. Clumps of trees or windbreaks are preferred as they roost in open country. Merlin was observed onsite (exact location unknown) during reconnaissance surveys conducted in December 2022 (RCI 2023rr). Suitable foraging habitat occurs on the project site, including the

jurisdictional components. It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable habitat but may forage nearby. The CNDDB database query resulted in one occurrence (2005) located along the banks of the California Aqueduct approximately 5 miles northeast of the Gates Substation, part of the PG&E downstream network upgrades.

For the PG&E downstream network upgrades, the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 fiber optic 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. 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.

California condor (*Gymnogyps californianus*)

California condor historically ranged from California to Florida and western Canada to northern Mexico. This species, through reintroduction, now occurs in the mountains of southern California north of the Los Angeles basin, in the Big Sur vicinity of the central California coast, near the Grand Canyon in Arizona, and in the mountains of Baja California. Forage in open terrain of foothill grassland and oak savannah habitats, and at coastal sites in central California, but have also been observed feeding in more wooded areas, though this is less common. Roosting sites include ridgelines, rocky outcrops, steep canyons, and in tall trees or snags near foraging grounds. They nest in natural cavities or caves in cliffs, sometimes in trees such as coast redwood or giant sequoia, and dead snags.

There is low quality foraging habitat within the project site, including the jurisdictional components. None were seen during surveys. It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable foraging habitat. For the PG&E downstream network upgrades, this species is not expected to occur in the alternative fiber line or substation study areas due to the lack of suitable foraging habitat.

Prairie falcon (*Falco mexicanus*) *nesting

The prairie falcon lives in dry areas of western North America, from southern Canada to central Mexico, favoring open habitats like grasslands, savannahs, rangelands, and desert scrub up to 11,000 feet. Breeding birds sometimes forage in agricultural fields. They require cliffs or bluffs for nesting though will sometimes nest in trees, on power line structures, on buildings, or inside caves or stone quarries. Prairie falcons primarily feed on ground squirrels, pikas, and horned larks but also hunt lizards, small birds, rodents, and insects.

This species is known to occur on the project site, and suitable foraging habitat occurs on the project site, including the jurisdictional components and the PG&E utility switchyard. This species was observed during reconnaissance surveys in December 2022, when an adult was observed perched on ground in a field as well as

during site inspections in April and July 2023 (flying over the site) (RCI 2023rr). It is not expected to nest on the project site, including the jurisdictional components and the PG&E utility switchyard due to lack of suitable habitat.

For the PG&E downstream network upgrades, this species has high potential to forage in the Scenario 1 Fiber Line, 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. There is no suitable nesting habitat along cliffs in the three alternative fiber line study areas or the four substation study areas; therefore, nesting is not expected in any of these locations.

Loggerhead shrike (*Lanius ludovicianus*) *nesting

Loggerhead shrike occur in open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns, and include agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, gold courses, and cemeteries.

This species is known to occur on the project site, and suitable foraging habitat occurs in the project site, including the jurisdictional components and the PG&E utility switchyard. Loggerhead shrike were observed foraging in the solar facility project area during reconnaissance surveys and during a site visit in February 2023 (Figures 5.12-3b-3d, RCI 2023w). For the PG&E downstream network upgrades, loggerhead shrike may forage in the three alternative fiber line study areas and the Cantua substation study area. This species may also nest in the Scenario 1 Fiber Line study area.

Oregon Vesper Sparrow (*Pooecetes gramineus affinis*) *wintering

Oregon vesper sparrow, a subspecies of the vesper sparrow, occupy open habitats such as grasslands, shrub-steppe, and agriculture in central and southern North America and have a narrower range than the vesper sparrow. This species breeds in northwestern California but migrates and overwinters in central California west of the Sierra Nevada Mountains, from the San Francisco Bay area through the San Joaquin Valley to coastal southern California.

This species is known to occur as a winter migrant on the project site was observed during surveys. There is suitable foraging habitat on the project site, including the jurisdictional components where it could forage in retired and managed agricultural land with sparse or weedy, low-growing vegetation. It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable habitat but may forage nearby.

For the PG&E downstream network upgrades, this species may forage in the three alternative fiber line study areas and a portion of the Cantua substation study area.

This species only winters in California and therefore would not nest on the project site, including the jurisdictional and non-jurisdictional components.

Yellow Warbler (*Setophaga petechia*)

Yellow warblers occupy much of California except the Mojave Desert and they generally occur in riparian vegetation in close proximity to water along streams, in wet meadows, and mixed conifer forest. They continue to breed across much of their former range, though they are nearly extirpated from breeding in the Central Valley. There is no suitable woodland/shrub nesting habitat within or adjacent the entire project site, including the jurisdictional and non-jurisdictional components.

This species is known occur within the solar facility project area and was observed during a site visit on May 8, 2023 (RCI 2023rr). There is suitable foraging habitat on the project site, including the jurisdictional components where it may occur during migration. It is not likely to occur in the PG&E utility switchyard project area due to lack of suitable habitat but may forage nearby.

For the PG&E downstream network upgrades, this species may forage in the three alternative fiber line study areas and 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. This species is not likely to nest in the alternative fiber line study areas or in the substation study due to lack of suitable habitat.

Le Conte's thrasher (*Toxostoma lecontei*)

This species prefers desert regions, such as 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. There is only one historical (1934) CNDDDB occurrence that resulted from the database query, located approximately 8.5 miles west of the Gates Substation, part of the PG&E downstream network upgrades.

This species is not expected to nest on or near the entire project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable scrub habitat. For the PG&E downstream upgrades, there is marginally suitable scrub habitat for this species in the Scenario 1 Fiber Line study area where it intersects undeveloped fragments of the Ciervo Hills east of I-5. Therefore, in the Scenario 1 Fiber Line study area where it has low potential to nest and forage. The species is not expected to nest or forage in the Scenario 2 Fiber Line or Scenario 3 study areas or in the substation study areas, due to lack of suitable scrub habitat.

Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)

This species breeds in wetlands in prairies and shallow areas of marshes, ponds, and rivers, and prefer to utilize cattails, bulrushes, or reeds for nesting. To forage, they may move to surrounding grasslands, croplands, or savanna.

This species may forage in agricultural areas on or near the project site, including the jurisdictional components and PG&E utility switchyard. There is also a moderate potential for this species to nest in the project area, specifically in within the project area for the solar facility at the one “freshwater wetland” which staff determined is likely identified as Basin 12 in the aquatic resource delineation (IP 2024q). This basin, considered non-jurisdictional as an isolated, manmade excavated features used for agriculture, is dominated by tule and cattails, with Goodding's willow (*Salix gooddingii*) on the banks (IP 2024r).

For the PG&E downstream upgrades, this species may forage in the three alternative fiber line study areas and in a portion of the Cantua Substation study area. There is no suitable foraging habitat is present in the Los Banos, Midway, or Gates Substations study areas, which are dominated by developed/disturbed land cover. There are documented yellow-headed blackbird colonies consisting of 5, 10, and 24 individuals in a roadside “pond” within 5 miles northwest of the Scenario 2 Fiber Line study area (ebird 2024). These records were from 2012 and 2016 and include a June 2016 observation of nine fledglings at this roadside “pond”. However, no suitable freshwater wetlands exist within the three alternative fiber line study or four substation study areas to support nesting.

Western mastiff bat (*Eumops perotis californicus*)

The western mastiff bat is an uncommon resident in southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through southern California, and from the coast eastward to the Colorado Desert. It roosts in rugged, rocky areas with downward-facing granite or sandstone crevices at least two to three meters above ground and may also roost in buildings or hollow tree cracks with similar conditions.

This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard due to lack of suitable habitat, including lack of nearby roosting sites. For the PG&E downstream upgrades, this species has a low potential in the Scenario 1 Fiber Line study area (RCI 2024cc).

Western red bat (*Lasiurus frantzii*)

Western red bat prefers riparian habitat near water such as edge habitats of forests, rivers, fields, and urban areas and is also known to occur in fruit and nut orchards, particularly in the Central Valley. They primarily roost alone in trees however can sometimes roost in small clusters of individuals. This species prefers to roost in sycamore, cottonwood, velvet ash, and elder trees, and in leaf litter in the winter, and

their coloring helps them blend among the leaves and branches (BCI 2025). This species has been documented roosting in almond orchards in the San Joaquin Valley, east of Merced in Merced County (Pierson et al. 2006, p. 11). Due to the extensive loss of natural riparian forests in this region, western red bat have likely adapted to using fruit and nut orchards as alternative roosting habitats (Pierson et al. 2006, p. 3). There is one CNDDDB record (1999) that resulted from the database query however it is located over 15 miles north near Fresno Slough and the Mendota River Wildlife Refuge and San Joaquin River edge.

This species may forage and roost in agricultural areas, specifically almond orchards at the PG&E utility switchyard project site and is known to inhabit eucalyptus trees for day roosts (Pierson et al. 2006). For the PG&E downstream upgrades, this species has a low potential to forage in the three alternative fiber line study areas and in a portion of the Cantua Substation study area, however, roosting habitat is limited.

Nelson's (=San Joaquin) antelope squirrel (*Ammospermophilus nelsoni*)

Nelson's antelope squirrels are a permanent resident of the western San Joaquin Valley where they are found in arid grasslands and shrub lands. This species inhabits open grassy areas and saltbush scrub habitats where soils are sandy and gravelly texture, or fine-grained soils that are nearly brick-hard when dry. Occurs in the eastern portions of San Luis Obispo and Santa Barbara counties, through Kings and Tulare counties, and in a small area in western Kern County. Their habitat includes open grassy areas and saltbush scrub with light to medium shrub cover, characterized by plants including saltbush, ephedra, bladder pod, goldenbush, and snakeweed. Nelson's antelope squirrels depend on kangaroo rat burrows, so areas they inhabit may be limited to areas with kangaroo rat populations. Males and females have home ranges of about 4.4 hectares, but they are not evenly distributed throughout their range and occur in uneven densities due to niche preferences. The nearest CNDDDB occurrence (2017) of this species is in the Panoche and Ciervo Hills, northwest of the project site within approximately 3.5 miles of the PG&E utility switchyard.

This species was not documented on site during reconnaissance surveys or site inspections; however, habitat may occur to the west of the PG&E utility switchyard. This species is not expected to occur on the project site, including the jurisdictional components. For the PG&E downstream upgrades, this species has moderate potential to occur in the scrub and grassland habitats in the Scenario 1 Fiber Line and Scenario 3 study areas. The species is not expected to occur in the Scenario 2 Fiber Line study area or in the substation study areas due to lack of suitable shrub, forb, or grassland habitat.

Giant kangaroo rat (*Dipodomys ingens*)

This species inhabits annual grasslands on gentle slopes with sandy, friable soils, occasionally found in alkali scrub. It prefers sparse vegetation and areas impacted by cattle grazing. Found on the western side of the San Joaquin Valley from Fresno to

Kern County and in the Carrizo Plain and Cuyama Valley in San Luis Obispo County. This species prefers areas with sparse vegetation for cover and may be found in areas of cattle grazing. It requires level or slightly sloping terrain and friable soils for burrowing. Most CNDDDB records are historical (over 30 years old) from the Ciervo Hills west of I-5, which likely serves as a movement barrier. There is one historical CNDDDB (1989) that is located on the east side of I-5, approximately 3 miles northwest of the gen-tie line corridor however this location may be extirpated. There are also several CNDDDB records located within five to seven miles of the PG&E utility switchyard in the Ciervo Hills. No recent occurrences have been documented within 10 miles of the project site, including the jurisdictional components or non-jurisdictional components, including the alternative fiber line or substation study areas.

This species is not expected to occur on the project site, including all jurisdictional components due to lack of suitable habitat. This species could potentially occur outside the project site to the west of the PG&E utility switchyard. For the PG&E downstream upgrades, there is marginally suitable scrub and annual grassland habitat within the Scenario 1 Fiber Line and Scenario 3 study areas where these areas intersect the undeveloped Big Blue Hills and remnant portions of the Ciervo Hills east of I-5. The grassland habitat in part of the Scenario 3 Fiber Line study area located in the Big Blue Hills and Ciervo Hills generally has high topographic relief and dense annual grassland vegetation with few shrubs for cover which is less suitable for the species. However, a dirt access road and signs of past cattle grazing have created sparsely vegetated areas, making the habitat moderately suitable for this species in both Scenario 1 Fiber Line and Scenario 3 study areas. Therefore, this species has moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas.

Short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*)

This species occurs along the western side of San Joaquin Valley in grassland and desert shrub associations, especially atriplex-dominated associations and favors flat to gently sloping terrain. May also occur in highly alkaline soils and prefers friable (easy to dig) soils for burrowing. All six CNDDDB occurrences resulting from the database query date before 2000 and are located south of California State Route 198; the most recent is from 1999; located approximately 4.4 miles west of the Scenario 3 Fiber Line study area on the west side of I-5.

This species is not expected to occur on the project site, including the jurisdictional components and PG&E utility switchyard. For the PG&E downstream upgrades, this species has moderate potential to occur in the Scenario 1 Fiber Line study area and a low potential to occur in the Scenario 3 Fiber Line study area. The species is not expected to occur in the Scenario 2 Fiber Line study area or in the substation study areas due to lack of suitable habitat.

Tulare grasshopper mouse (*Onychomys torridus tularensis*)

The Tulare grasshopper mouse historically ranged from western Merced and eastern San Benito counties to Madera County and the Tehachapi Mountains. Currently, they are found along the western Tulare Basin (including western Kern County), the Carrizo Plain, the Cuyama Valley side of the Caliente Mountains (San Luis Obispo County), and the Ciervo-Panoche region (Fresno and San Benito counties). They typically inhabit shrubland communities in hot, arid grassland and shrubland associations. These include alkali sink and mesquite associations on Valley Floor, and grasslands associations on the sloping margins of the San Joaquin Valley and Carrizo Plain region. Specific habitat requirements are unknown. The CNDDDB query for the project included occurrences within the Lillis Ranch topographic quadrangle in the Ciervo Hills, approximately 3 to 4.5 miles northwest of the project site, including a segment of the gen-tie line corridor (jurisdictional component) and the PG&E utility switchyard, all from 2016. One of these occurrences (No. 104) documented the capture and release of 2 males and 2 females in 2016. A second CNDDDB record (No. 103) noted the capture and release of a male, also in 2016.

This species is not expected to occur on the project site, including all jurisdictional components due to lack of suitable habitat. This species could potentially occur outside the project site to the west of the PG&E utility switchyard. For the PG&E downstream upgrades, this species was not observed during surveys but has low potential to occur along Scenario 3 Fiber Line study area and moderate potential to occur in the Scenario 1 Fiber Line study area. The species is not expected to occur in the Scenario 2 Fiber Line study area or in the substation study areas due to lack of suitable habitat.

San Joaquin pocket mouse (*Perognathus inornatus*)

San Joaquin pocket mice are found in California's central valleys, including the San Joaquin, Sacramento, and Salinas valleys, as well as the surrounding foothills of the western Sierra Nevada mountains in open grasslands, savanna, and desert shrub communities. This species is found from the upper Sacramento Valley, Tehama County, southward through the San Joaquin and Salinas valleys and contiguous areas, to the Mojave Desert in Los Angeles, Kern and San Bernadino counties. They are most abundant in uncultivated areas and often live in areas with sandy washes and finely textured soils. The nearest CNDDDB occurrence of this species is less than a mile from Scenario 1 Fiber Line study area (No. 146), however is on the west side of I-5 (CNDDDB 2024).

This species is not expected to occur in the project area for the jurisdictional components or the PG&E utility switchyard due to lack of suitable habitat, including lack of sandy washes. For the PG&E downstream network upgrades, this species has a low potential to occur in the Scenario 1 Fiber Line study area. The species is not expected to occur in the Scenario 2 Fiber Line or Scenario 3 Fiber Line study areas or in the substation study areas due to lack of suitable habitat.

American badger (*Taxidea taxus*)

The American badger, a state species of special concern, were once widespread throughout open grassland habitats of California. This species is now an uncommon permanent resident with a wide distribution across California, except from the North Coast area. American badgers inhabit burrows and often predate and forage on other small mammal burrows as evidenced by claw marks along the edges of existing burrows. This species is most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. It prefers habitats such as cropland, desert, grassland, savanna, and shrubland/chaparral. This species is generally associated with treeless regions, prairies, parklands, and cold desert areas (Zeiner *et al* 1990). American badger feed mainly on various species of small mammals and capture some of its prey above ground foraging on birds, eggs, reptiles, invertebrates, and carrion.

This species is known to occur in the project area for the jurisdictional components. During surveys conducted in December 2022, surveyors detected oblong burrows with characteristic claw marks of this species with a total of three badger burrows detected within a ditch along the north boundary of the project site (RCI 2023w; RCI 2023rr). Surveys documented the presence of suitable prey species (California ground squirrel, small birds, and reptiles) throughout the project site, including solar facility area and other jurisdictional components. This species has a low potential to occur in the project area for the PG&E utility switchyard.

For the PG&E downstream network upgrades, this species has a high potential to occur in the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 Fiber Line study areas and a portion of the Cantua Substation study area. These areas contain suitable friable soils and suitable prey species are present in the areas dominated by agriculture. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to lack of suitable habitat.

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox is federally endangered and state-threatened species found in the deserts and grasslands of the San Joaquin Valley. It inhabits alkali sink, valley grasslands, and woodlands with minimal shrubs and grasses, primarily in the southern and western valley, foothills, and areas like the Carrizo Plain, as well as the Panoche Valley and Cuyama Valley in San Luis Obispo County. Within the San Joaquin Valley its range extends from southern Kern County north to Contra Costa, Alameda, and San Joaquin counties on the western side of the valley and to the La Grange area of Stanislaus County on the eastern side of the valley. Historically widespread, its range has significantly declined since 1930.

The kit fox is a nocturnal, opportunistic hunter, primarily feeding on kangaroo rats but will also prey on white-footed mice, pocket mice, ground squirrels, rabbits, ground-nesting birds, and during certain times of the year, they will also eat insects. It rests in dens during the day to escape the heat and their dens also provide shelter and

cover from predators. Kit foxes either dig their own dens, use those constructed by other animals, or use human-made structures such as culverts, abandoned pipelines, or banks in sumps or roadbeds.

A focused San Joaquin kit fox habitat assessment for project site, including the jurisdictional components and the PG&E utility switchyard was conducted in March 2023 and included as Appendix Q-6 in the application (RCI 2023rr). The parcel currently proposed for the PG&E utility switchyard was instead identified as the "substation" in the habitat assessment. In addition, reconnaissance surveys were conducted December 8, 9, 13, and 14, 2022 within the project site, including the jurisdictional components and PG&E utility switchyard. There is no suitable habitat throughout the project area for the jurisdictional components, including the solar facility, BESS, step-up substation, and associated facilities. There is moderately suitable habitat for the species at the PG&E utility switchyard and surrounding area. This species may forage and explore staging and parking areas on the western side of the project footprint (west of I-5), including the gen-tie line corridor and the PG&E utility switchyard, due to innate curiosity and foraging opportunities created by construction activity. Although none were observed during daytime surveys, this primarily nocturnal and is not likely to be detected during the day. Therefore, this species is considered to have a moderate potential to occur in the area west of I-5

For the PG&E downstream network upgrades, this species has a moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas and a low potential to occur in the Scenario 2 Fiber Line study area and a portion of the Cantua Substation study area. These areas contain suitable friable soils and suitable prey species are present in the areas dominated by agriculture. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to lack of suitable habitat.

Regulatory

Federal

Endangered Species Act (16 U.S.C., § 1530 et seq., and 50 C.F.R., part 17.1 et seq.). The Endangered Species Act (ESA) designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Its purpose is to protect and recover imperiled species and the ecosystems for which they depend. It is administered by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The USFWS is responsible for terrestrial and freshwater organisms while NMFS is responsible for marine wildlife such as whales and anadromous fish (such as salmon). Species may be listed as endangered or threatened. All species of plants and animals, except pest insects, are eligible for listing. Species are defined to include subspecies, varieties, and for vertebrates, distinct population segments. The ESA protects endangered and threatened species and their habitats by prohibiting the "take" of listed animals and the interstate or

international trade in listed plants and animals, including their parts and products, except under federal permit. "Take" is broadly defined in ESA to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct" (16 U.S.C., §1532(19)). Take can also include significant habitat modification or degradation that directly results in death or injury to a listed wildlife species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 C.F.R., §17.3). Take of federally listed species as defined in the ESA is prohibited without incidental take authorization, which may be obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. The administering agencies are the USFWS, National Oceanic Atmospheric Administration (NOAA), and NMFS.

The Bald and Golden Eagle Protection Act (16 U.S.C. § 668–668c). This Act—enforced through regulations written by the USFWS—prohibits the "taking" of bald and golden eagles, including their parts, nests, or eggs. To take is defined as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb" any bald or golden eagle, whether "alive or dead...unless authorized by permit". The administering agency is USFWS.

Migratory Bird Treaty Act (16 U.S.C., §§ 703–711). The Migratory Bird Treaty Act (MBTA) makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid federal permit. The USFWS has authority and responsibility for enforcing the MBTA. The administering agency is USFWS.

Clean Water Act Sections 401 and 404 (33 U.S.C., §§ 1251–1376). The Clean Water Act (CWA) requires the permitting and monitoring of all discharges to surface water bodies. Section 404 (33 U.S.C., § 1344) requires a permit from the United States Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into a water of the United States, including wetlands. Section 401 (33 U.S.C., § 1341) requires a permit from the regional water quality control board for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards. The administering agency is the U.S. Army Corps of Engineers (Section 404) and the State or Regional Water Quality Control Board (Section 401).

State

California Endangered Species Act (Fish and Game G. Code, §§ 2050 through 2098). The California Endangered Species Act (CESA) of 1984 states that all native species of fish, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected and preserved. CESA prohibits the take of any species

of wildlife designated by the California Fish and Game Commission as endangered, threatened, or candidate species. The CDFW may authorize the take of any such species if certain conditions are met. These criteria are listed in Title 14 of the California Code of Regulations, Section 783.4 subdivisions (a) and (b). For purposes of CESA "take" means to hunt, pursue, catch, capture, or kill (Fish and G. Code, § 86). The administering agency is CDFW. For the purposes of the proposed project the CEC has in-lieu permitting authority to issue the incidental take authorization should impacts to state listed species occur.

Fully Protected Species (Fish and Game G. Code, §§ 3511, 4700, 5050, and 5515). These sections designate certain species as fully protected and prohibit the take of such species or their habitat unless for scientific purposes (see also Cal. Code Regs., tit. 14, §670.7). The incidental take of fully protected species may also be authorized in an approved natural community conservation plan (Fish and Game Code, § 2835). The administering agency is CDFW.

California Fish and Game Code, §§ 3503, 3503.5, 3513, and 3800

The following sections of the Fish and Game Code designate protections for birds and/or their nests or eggs. The administering agency is CDFW.

Section 3503. This section makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

Section 3503.5: This section makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes and Strigiformes or to take, possess, or destroy the nest or eggs of any such bird.

Section 3513: This section protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds.

Section 3800: All birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds are nongame birds. It is unlawful to take any nongame bird except as provided in this code or in accordance with regulations of the commission or, when relating to mining operations, a mitigation plan approved by the department.

Nongame Mammals (Fish and G. Code, § 4150). Nongame mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal. A nongame mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission.

Lake and Streambed Alteration Agreement (Fish and G Code, §§ 1600 et seq.). Regulates activities that may divert or obstruct the natural flow of any river,

stream, or lake; change the bed, channel, or bank or any river, stream, or lake; use materials from any river, stream or lake; or deposit or dispose of material into any river, stream, or lake. "Any river, stream, or lake" includes those that are dry for periods of time as well as those that flow year-round. The administering agency is CDFW.

Native Plant Protection Act (Fish and G. Code, § 1900 et seq.). The Native Plant Protection Act was enacted in 1977 and designates state rare and endangered plants and provides specific protection measures for identified populations. Those laws prohibit the take of endangered or rare native plants but include some exceptions for agricultural and nursery operations; for emergencies; after properly notifying CDFW, for vegetation removal from canals, roads, and other sites; due to changes in land use; and in certain other situations. The administering agency is CDFW.

Porter-Cologne Water Quality Control Act (California Water Code Division 7). The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas. The SWRCB or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of waters of the state.

Local

Fresno County General Plan

Open Space and Conservation Element. The General Plan Review (February 2024) outlines goals and policies that address the protection and preservation of the county's natural resources, open spaces, and cultural resources. are described in Part 2, Open Space and Conservation Element (Fresno County 2010). The purpose of the Open Space and Conservation Element of the Fresno County General Plan is the protection, and preservation of natural resources, preserving open space areas, managing the production of commodity resources, protecting and enhancing cultural resources, and providing recreational opportunities. The administering agency is the Planning Division of the Fresno County. General Plan goals and policies applicable to the proposed project are as follows:

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

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. (RDR).

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. (RDR/PSP).

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. (PSP).

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 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 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 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 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 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.8 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 population are maintained at viable levels.

Policy OS-E.1 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 U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife 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 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 information consultation with the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Policy OS-E.3 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 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 U.S. Fish and Wildlife Service.

Policy OS-E.6 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 The County shall continue to closely monitor pesticide use in areas adjacent to habitats of special status plants and animals.

Policy OS-E.8 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 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 upon 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 impacts on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.11 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 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 resources.

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.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 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.19 Nesting Birds. For development projects on sites where tree or vegetation/habitat removal is necessary and where the existence of sensitive species and/or bird species protected by California Fish and Wildlife Code Sections 3503 and 3503.5 and Migratory Bird Treaty Act has been determined by a qualified biologist, surveys for nesting birds shall be conducted within 14 days prior to project activities by a qualified biologist for all construction sites where activities occurring during nesting bird season (February 1 through September 15). The surveys shall include the entire disturbance area plus at least a 500-foot buffer around the project site. If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of

250 feet for non-raptor bird species and at least 500 feet for raptor species, unless determined otherwise by the qualified biologist. Buffer distances for bird nests shall be site-specific and an appropriate distance, as determined by a qualified biologist. The buffer distances shall be specified to protect the bird's normal behavior thereby preventing nesting failure or abandonment. The buffer distance recommendation shall be developed after field investigations that evaluate the bird(s) apparent distress in the presence of people or equipment at various distances. Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. The qualified biologist shall have authority to order the cessation of all nearby project activities if the nesting birds exhibit abnormal behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young) until an appropriate buffer is established. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed, and young have fledged the nest prior to removal of the buffer. The biologist shall submit a report of these preconstruction nesting bird surveys to the County to document compliance within 30 days of its completion.

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

Policy OS-F.2 The County shall require developers to use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.

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 The County shall establish procedure 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.8 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.

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effects on biological resources to be potentially significant. The following projects included in **Appendix A, Table A-1** and **Figure A-1** are part of the cumulative setting for biological resources:

- FC-1: Akhavi LLC Project
- FC-2: Arroyo Pasajero Bridge Replacement Geotechnical
- FC-3: Sentry Ag Services Project
- FC-4: Kamm Avenue Pistachio
- FC-5: WTC Riverdale, LLC Project
- FC-6: Seneca Resources Corporation Project
- FC-7: Landfill Gas Conditioning System & Pipeline
- FC-8: Gas Station and Convenience Store
- FC-9: Heartland Hydrogen Project
- FC-10: Agricultural Commercial Center
- FC-11: Multi use/Freeway commercial development
- FC-12: Scarlet Solar
- FC-13: Sonrisa Solar Project
- FC-14: Tranquility Solar Project
- FC-15: Luna Valley Solar
- FC-16: H2B2 USA, LLC, Project
- FC-18: Five Points Pipeline, LLC, Project
- FC-20: Agricultural Operations Facility Project
- FC-21: Plug Project Holdings Co. Project
- FC-23: Microwave Tower Project
- FC-24: Tranquility Wastewater Treatment Plant Improvement Project
- WWD-1: Westlands Solar Park (WSP)

- FC-25: BayWa.r.e/Cornucopia Hybrid Solar Project
- FC-26: Manning 500/230 kV Substation Project
- FC-27: CES Electron Farm One
- FC-28: San Luis West Solar Project
- FC-30: Key Energy Storage

5.2.2 Environmental Impacts

BIOLOGICAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

BIOLOGICAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, biological resources.				

5.2.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Impacts to biological resources were assessed through consideration of effects on the landscape, habitat, community, and species level for the proposed project and alternatives. Impacts refer to any project related activity including initial ground disturbance, vegetation removal, construction, road improvements, operation, and any other long-term O&M activities that would be implemented to support the operation of the proposed project.

Appendix G of the CEQA Guidelines provides a set of topical guidance questions for an agency to consider when determining whether the project has any significant impacts. For biological resources, these questions are listed in the table above.

Direct and Indirect Impacts

The CEQA Guidelines define direct impacts as those impacts that result from the project and occur at the same time and place as project activities. Some examples of direct impacts could include the removal of vegetation or habitat; disruption to natural behavior from increased human presence and/or noise; mortality or injury from crushing, trampling, or entrapment; and exposure to fugitive dust, herbicides, or other hazardous materials.

Indirect impacts are caused by the project but can occur later in time or farther removed in distance and are still reasonably foreseeable and related to the operation of the project. Indirect impacts can include the disruption of native seed banks, spread of invasive plant species, changes to soil or hydrology that adversely affects native species over time, disruption of prey base, or increased predation through alterations of the physical landscape from project features. Indirect impacts may also include fragmentation of habitat, edge effects, increased traffic, and human disturbance. Long term indirect effects may also occur from the operation and maintenance of the proposed project.

Permanent and Temporary Impacts

Direct or indirect impacts on biological resources could be permanent or temporary in nature. Staff considers any impacts that result in the irreversible change or removal of

biological resources to be permanent. However, any impact which would have reversible effects on biological resources could be viewed as short-term and temporary as long as they occur for less than a year and if recovery is expected without long-term effects. If the impact lasts greater than one year it may be considered a long-term temporary impact or a permanent impact depending on the extent and type of disturbance.

Impact analyses typically characterize effects to vegetation and wildlife habitat as either temporary or permanent. Permanent impacts are generally considered disturbances or land use conversion that would preclude most natural wildlife habitat function throughout the life of a project or longer. Temporary impacts are generally understood as construction disturbance occurring on a site that allow a return to more natural conditions or may be actively revegetated or enhanced, returning to natural conditions within approximately five years.

In project area, the interpretation of permanent and temporary impacts needs to reflect the slow recovery rates of native plant communities and the resulting loss of value to native wildlife. These recovery challenges result from depleted soil conditions and the extended period since the site functioned as native habitat. Natural recovery rates from disturbance are relatively unstudied and not well documented. During this recovery period, the value of the habitat to wildlife is diminished and in some cases it may no longer supports species that previously inhabited the area. In this analysis, an impact that might be considered temporary in other parts of California may be considered long-term or permanent due to these slow natural recovery rates.

Permanent and long-term habitat loss, as defined by staff, includes impacts that take more than five years to recover. For this analysis, project impacts to habitat that last for the project's lifetime or beyond are considered permanent. Temporary impacts to habitat that persist for more than five years are considered long-term but not necessarily permanent, depending on the extent of disturbance and the feasibility of full habitat recovery. The construction and operation of the proposed project may have permanent impacts throughout the solar facility and other project components, such as the location of any project facilities and along any permanent new or widened access routes. In addition, the project may result in long-term impacts to habitat in areas disturbed during temporary construction activities due potential factors such as slow natural recovery rates, soil degradation, habitat fragmentation, and changes in species composition.

Thresholds of Significance

A significant impact is defined in the CEQA Guidelines as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (Cal. Code Regs. tit. 14, § 15382). An impact to biological resources would be considered by CEC staff to be significant (before considering offsetting mitigation measures) if the construction or operation of the project would result in one or more of the following:

- The potential for reduction, loss, or degradation of habitat for threatened, endangered, or special status species;
- The potential for loss or “take” of any federal or state listed plant or animal species; fully protected species; special status species, or species protected by the MBTA or other regulations;
- A net loss or permanent change in the extent or functional value of any habitat or biotic community considered biologically, scientifically, recreationally, or economically significant by federal, state, or local policies, statutes, and regulations;
- Adverse effect on federally protected wetlands as defined in Section 404 of the Clean Water Act;
- Alteration or destruction of habitat that precludes reestablishment of native populations of plants and animals;
- Impairment of movement, migration, or dispersal of resident and migratory fish and wildlife species; or
- Substantial loss of habitat or population decline of any native fish, wildlife or plant species, or overall reduction in biological diversity.

Mitigation Strategy

This CEQA analysis evaluates biological impacts resulting from all aspects of the project. Whenever impacts are identified from development of the site and related facilities, staff has recommended conditions of certification (COC), to reduce impacts from the proposed project to less than significant levels. Each of the proposed conditions of certification have been developed by staff to ensure that impacts to sensitive biological resources are minimized or avoided to the extent feasible and impacts are reduced to less than significant. Where appropriate, the applicant’s proposed mitigation measures were incorporated into the conditions of certification proposed below.

To facilitate effective implementation of Assembly Bill 205 (AB 205), the CEC and CDFW entered into a Memorandum of Understanding (MOU) in 2022. Under this agreement, CEC serves as the in-lieu permitting authority, ensuring compliance with environmental regulations while expediting project approvals, including for CDFW-administered permits such as incidental take permits (ITPs) and Lake and Streambed Alteration (LSA) agreements.

The MOU establishes a coordination plan designed to ensure timely and effective consultation between the two agencies regarding potential impacts of energy projects on fish, wildlife, and plant resources, as well as their habitats. As part of this process, CEC serves as the in-lieu permitting authority, ensuring compliance with environmental regulations while expediting project approvals. The MOU ensures CDFW's expertise is integrated into project review, particularly for Fish and Game

Code authorizations such as incidental take authorization. These recommendations are incorporated into the CEC's certificate as enforceable COCs, which ensure that approved projects meet environmental protection requirements. In addition, staff incorporates CDFW staff's recommendations into mitigation measures for the non-jurisdictional components of a project, as needed.

Additional impacts associated with project components outside of CEC's jurisdiction, including the PG&E Utility Switchyard and the PG&E Downstream Network Upgrades which would be permitted by California Public Utilities Commission (CPUC), may require mitigation to be less than significant. The mitigation measures recommended below would be enforced by the CPUC as mitigation measures (MMs). These MMs include PG&E Standard Construction Measures (RCI 2024w) as well as CEC staff's recommended mitigation measures.

5.2.2.2 Direct and Indirect Impacts

The discussion below outlines potential direct and indirect impacts to biological resources. Impacts from operation and decommissioning are discussed under the "Operation" subsection.

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

Construction- *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, project construction would affect special-status species and habitat and can be mitigated to below the level of significance with the incorporation of Conditions of Certification (COC) **BIO-1** to **BIO-17** and Mitigation Measures (**MM**) **BIO-1** to **BIO-19**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Special-Status Plants and Habitat

The term "habitat" refers to the environmental and ecological conditions where a species is found. Suitable habitat for special-status plants is lacking in the project area and the region has been in agricultural use for a least a century, according to the County of Fresno website (Fresno 2025). The project site is predominantly retired agricultural lands that have been irregularly farmed over the last 10 years and seasonally or annually disked when not growing crops (RCI 2023n). Further, these lands, which are currently owned by Westlands Water District, have been impacted by significant soil degradation issues due to prolonged irrigation and accumulation of

salts and selenium concentrations (RCI 2023hh). These lands are no longer able to support populations or occurrences of native plants due to ongoing disturbance and ecological conditions. The conversion of natural habitat to agricultural land has eliminated native plant communities that once occurred on the project site, such as valley and foothill grassland, which typically supports a diverse range of species, including special-status plants such as Lost Hills crownscale.

The project would not have direct or indirect impacts on state or federally listed threatened or endangered plants. No special-status plant species were identified as occurring in the project area during the literature review or none were detected during reconnaissance surveys (December 2022 and March 2023) site inspections (January 31 through September 9, 2023) conducted by the applicant. These surveys were generally timed to coincide with the blooming periods of species with the potential to occur. Due to the lack of suitable habitat and the disturbed and developed conditions within the project area, state or federally listed plants or sensitive plants are not expected to occur. In addition, no sensitive plant species are known to occur within the jurisdictional components of the project site. Therefore, there would be no impact.

The project would not result in direct or indirect impacts on state or federally listed threatened or endangered plant communities or critical habitat. No special status plant communities or critical habitat was identified as occurring in the project area during the literature review or identified during surveys conducted by the applicant (CDFW 2024). Based on lack of suitable habitat and existing conditions in the project area, special-status plant communities are not expected to occur and there would be no impact.

Loss of Habitat for Wildlife

Wildlife habitat is generally described in terms of vegetation, which provides physical structure, biological productivity and food resources for many wildlife species. However, a complete explanation often also includes factors such as availability or proximity to water, suitable nesting or denning sites, shade, foraging perches, cover sites to escape from predators, soils that are suitable for burrowing or hiding, low levels of noise and disturbance, and many other factors that are unique to each species. Further, vegetation often reflects other habitat components such as regional climate, soil productivity and texture, elevation, and topography. While vegetation is typically a useful overarching descriptor for habitat, in this case, the project site is mostly barren and regularly disked. Therefore, disked "land cover" or "agricultural" are the terms used, as native habitat has largely been extirpated from the area due to the long history of agricultural use. These factors are the primary focus in this analysis of impacts to wildlife habitat.

The solar facility area would require minimal surface smoothing and remain largely in its current state, with steel piles driven into the soil using pneumatic techniques. The gen-tie line corridor would require minimal to no grading due to the flat topography

(IP 2024o). Construction of BESS, step-up substation and O&M facility would require grading and excavation activities (IP 2024o). Site preparation, as outlined on Sheet C.200 in the site plans, included as Appendix F in the opt-in application, includes clearing/grubbing, minor grading, compaction, mowing vegetation, and re-stabilization of disturbed areas. Minor surface smoothing may occur for solar panel installation and all grading would include surface roughing. Access roads would be constructed to match the surrounding existing ground elevations to allow the continuation of drainage patterns and the overall drainage patterns would not be altered. Additionally, roads would be scarified and compacted to a 95% subgrade and topped with 6 inches of aggregate base (RCI 2023c). Grading plans have been designed to promote sheet flow and maintain natural features, with one key exception. The 124 feet by 960 feet stormwater basin, which would function as 125-acre retention area designed to impound water for approximately 24 hours following large storm events. More detail on the proposed stormwater basin are provided below under the "Stormwater Basin" subsection.

Per the application, development of the project would result in loss of approximately of 4,818 acres of Swainson's hawk foraging habitat during operation, which is also potential foraging habitat for other species. Additionally, during construction, the project would have temporary impacts on up to 9,510 acres of foraging habitat. However, 159 acres of this amount would be temporary impacts for development of the PG&E utility switchyard (non-jurisdictional component) in addition this area was not identified as suitable foraging habitat. The applicant provided a draft Swainson's Hawk Conservation Strategy and Vegetation Management Plan as part of the opt in application which included plans for revegetation of the site (RCI 2023hh). Implementation of this plan is intended to provide high quality foraging habitat within the solar development areas of the project. Refer to the "Swainson's Hawk – Foraging" subsection for further discussion. Although revegetation of the project site is proposed for the project, there would still be a permanent loss of foraging habitat for many species of wildlife that could potentially occur on the project site.

The proposed revegetation plan would be implemented in all areas subject to soil disturbance and grading including, but not limited to, the solar facility project area, temporary access roads, construction temporary lay-down areas, gen-tie and collection areas, and staging areas (RCI 2023hh). However, the revegetation would exclude access roads and areas that will have concrete or gravel foundations including the BESS area, step-up substation, and associated buildings. In addition, there would be a permanent loss of habitat in the areas where the foundations for the solar panels would be installed. Currently, the site is largely devoid of vegetation however, common and special status wildlife could forage in areas where crops are grown intermittently depending on rain conditions (IP 2025b).

Staff has reviewed the plans and incorporated into staff's proposed COC **BIO-9**, (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan) which is intended to ensure that permanent grassland vegetative

cover would be reestablished over the project site beginning with construction, with the goal of preserving and enhancing existing habitat. Although this measure is primarily designed as mitigation for loss of foraging habitat for Swainson's hawk and burrowing owl (as described further below), it is designed to provide as good or better foraging habitat than currently available on the project site. This habitat would be comprised of native and naturalized forbs and grasses, along with tree plantings, and would be managed for weeds (RCI 2023hh). Staff's proposed COC **BIO-11**, (Swainson's Hawk Conservation Easement and Revegetation Security), would establish a Security amount, required prior to start of construction, to ensure that adequate funding is available to support the success of COC **BIO-9**. These measures are discussed further below under the "Swainson's Hawk - Foraging" subsection.

Construction of the proposed project would result in the temporary direct impacts from the loss of foraging habitat for a variety of wildlife. The impact on individual species would depend on factors including how a species tolerates disturbance and the ability of a species to adapt to features such as the solar panel arrays, access roads, noise, lighting, and human disturbance. For some common species including small reptiles, mice, rabbits, ground squirrels, and some disturbance-tolerant birds, the project would not lead to a substantial loss of foraging habitat and may in fact provide additional perches, refugia, and increased access to some prey. However, for other species, the project would likely reduce or eliminate foraging opportunities due to the presence of the project facilities. Indirect impacts to habitat for common wildlife, including loss of habitat due to the colonization of invasive plants and fugitive dust, are further discussed below under the "Weed Proliferation" and "Fugitive Dust" subsections. Loss of common wildlife and their habitat could also indirectly impact special-status wildlife that depend on these species as a prey base.

To reduce impacts from fugitive dust, staff proposes implementation of dust control measures, including onsite speed limits, to control fugitive dust plumes as part of COC **AQ-SC3** (Construction Fugitive Dust Control), and COC **AQ-SC4** (Dust Plume Response Requirement). See **Section 5.1, Air Quality** for a further discussion. Fugitive dust is also further discussed below under the "Fugitive Dust" subsection.

Implementation of staff's proposed COCs **BIO-9**, **BIO-11**, **AQ-SC3**, and **AQ-SC4** would avoid or reduce impacts from loss of habitat as well as indirect impacts on fugitive dust to foraging habitat for wildlife, including nesting birds and special-status wildlife species to less than significant, and as discussed in the subsections below.

Foraging Birds and Common Wildlife

Foraging birds, including special-status species, are known to occur in the project area and were detected during surveys, including golden eagle, burrowing owl, ferruginous hawk, northern harrier, mountain plover, white-tailed kite, California horned lark, merlin, prairie falcon, loggerhead shrike, Oregon vesper sparrow, and yellow warbler. These and other special-status species may use the project site for foraging or during winter migration, along with many other species of common wildlife. See **Table 5.2-**

1, for a complete list of species with the potential to forage in the project site and vicinity, including along Cantua Creek, and surrounding areas. All native birds, including special-status species, are protected under the federal MBTA and California Fish and Game Code.

Direct impacts to these species include construction-related mortality, degradation of foraging habitat, disturbance due to increased levels of human presence, noise, vibration, fugitive dust, habitat loss or fragmentation. Indirect impacts include temporary or permanent displacement, and disruption of movement. It is assumed that most mobile animals - both special-status and common - would likely move away from any temporary disturbance. However, species less able or inclined to disperse (such as nesting birds and raptors) may remain near the site and experience temporary adverse impacts. Impacts to nesting birds and including special-status species are discussed in the subsections below. The perimeter fencing is designed as a "wildlife friendly option" with a four to six inch gap at the bottom, to allow wildlife to pass through and prevent complete restriction of movement (RCI 2023c). Large aerial foragers, such as golden eagles and other raptors, may have reduced foraging opportunities on the project site during construction and operation of the facility, particularly in the worst case scenario when solar panels are lying flat during the sun's zenith. This is discussed further below under the "Collisions, Night Light Lighting, and Attraction of Migratory Birds" subsection.

The loss of foraging habitat for listed species would typically be considered a significant impact, directly through the removal of vegetation that could support food and prey species, and indirectly due to the long-term alteration of available habitat. Foraging habitat on the project site, however, is marginal to moderately suitable and spatially spread primarily along project boundaries, while the solar field and components consist of retired agricultural lands that are routinely tilled or disked. However, many species will forage in disked fields for insects, seeds, and rodents, depending on availability. Westlands Water District has a non-irrigation covenant on the title of these retired lands which affects the project site, as well as various surrounding parcels, creating a patchwork of habitat with varying degrees of suitability for foraging.

For the jurisdictional components of the project, implementation of the proposed project would result in the direct permanent loss of approximately 308 acres of habitat that supports foraging for a variety of resident and migratory birds (RCI 2024ww). The total permanent impact in the "PV Development Footprint" would be 245.2 acres. An additional 50 acres of permanent habitat loss would result from construction of PG&E utility switchyard, which is discussed in the subsection below for the non-jurisdictional components of the project (RCI 2024ww). Per the application, development of the project would result in loss of approximately of 4,818 acres of Swainson's hawk foraging habitat, which is also potential foraging habitat for other species (IP 2024p). Additionally, during construction, the project would temporarily impact up to 9,510 acres of foraging habitat (jurisdictional and non-jurisdictional

components). However, 159 acres of this amount would be temporary impacts for development of the PG&E utility switchyard (non-jurisdictional component). Species, including common bird species, that rely on the site for year-round cover and foraging would be subject to more significant effects from the project compared to species that utilize the project site for foraging alone. Other special-status species may use the site during winter or migration season but would not nest on the project site. The impact from the loss of foraging, migration stopover, and wintering habitat for these species would be comparable to other habitat loss effects. Loss of nesting and foraging habitat for these common and special-status bird species, as well as other common wildlife, would adversely affect populations of these species within Fresno County and the San Joaquin Valley. Common wildlife are discussed above under the "Habitat Loss for Wildlife" subsection.

Direct impacts such as Noise are further discussed below under the "Noise" subsections. Indirect impacts, including loss of habitat due to the colonization of invasive plants and fugitive dust, are further discussed below under the "Weed Proliferation" and "Fugitive Dust" subsections. Staff has proposed conditions of certification to reduce direct impacts to foraging common and special-status birds which are described below.

The following is a list of general impact, avoidance, and minimization measures proposed by staff, which incorporate mitigation measures proposed by the applicant, as appropriate. These measures apply to impacts on both common and special-status species. However, these are more general in nature and are listed here so as to not be duplicative of the species-specific discussions listed in the subsections below.

- **BIO-1** through **BIO-4** (Designated Biologist Selection and Qualifications, Designated Biologists Duties, Biological Monitor Selection, and Designated Biologist and Biological Monitor Authority) would require the applicant to hire and designate a qualified biologist and defines the duty of biologists and monitors for the project;
- **BIO-5** Worker Environmental Awareness Program (WEAP) would require all construction and operation personnel and project staff to undergo environmental awareness training prior to conducting work on the project;
- **BIO-6** Biological Resources Minimization Implementation Management Plan (BRMIMP) requires the development of a written plan, developed in consultation with the designated biologist, to ensure that all biological resources COCs are satisfactorily implemented; and
- **BIO-7** General Impact Avoidance and Minimization Measures identifies a series of standard environmental measures, that must be complied with during construction. The condition includes limiting work to daylight hours, inspecting pipes and excavations, conducting pre-construction surveys, monitoring and many other protective measures.

In addition, staff recommends COC **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan) and COC **BIO-11**, (Swainson's Hawk Conservation Easement and Revegetation Security).

Implementation of these measures would reduce impacts from loss of habitat on foraging birds and common wildlife. These measures are discussed further below under the "Swainson's Hawk - Foraging" subsection.

Implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-9** and **BIO-11**, would avoid or reduce impacts to foraging birds and common wildlife to less than significant.

Swainson's Hawk – Foraging. Swainson's hawks were observed on the project site during protocol surveys performed in 2023, with a total of six active nests and four individuals observed (RCI 2023tt). Of these nests, five were located on the project site which were detected in the central to west side of the proposed solar facility in a row. There were no Swainson's hawks recorded along the gen-tie line or within the PG&E utility switchyard (non-jurisdictional components). The sixth nest was recorded off site within the 0.5 mile buffer, see Figures 2 and 3 in the opt-in application (RCI 2023hh). In addition, this species was observed in the project area, displaying both foraging and breeding behaviors, during spring reconnaissance surveys and monthly site inspections from March to August 2023 (RCI 2023gg).

The applicant provided a foraging habitat assessment, prepared by Stringer Biological Consulting, which analyzed a 10-mile radius around the project site footprint, including jurisdictional components and PG&E utility switchyard (non-jurisdictional) and totaled 372,082 acres (RCI 2023hh) and included the project site. The study documented 41 nesting pairs of Swainson's hawks within the study area. The study determined these hawks would be able to use 205,133 acres of suitable foraging habitat within a 10-mile radius of the project site footprint, prior to project construction, see Table 6 in the applicant's foraging habitat assessment (IP 2024q). The study determined that 106,848 acres of habitat would be necessary to support the local population of Swainson's hawk, and, after subtracting these two figures, identified the resulting 98,285 acres as "surplus" habitat for the species (RCI 2023gg).

To establish a significance level under CEQA, the applicant relied on several prior studies in determining that impacts to 70% or greater of the "surplus" foraging habitat would constitute a significant impact to the species under CEQA (IP 2024q). Put another way, a CEQA threshold set at 70% would theoretically allow for a loss of 29,485 acres of foraging habitat before impacts would be considered significant. The 70% threshold was suggested by Jim Estep in a study from 2015 as being adequate to provide a buffer of foraging habitat above the minimum number of acres needed, as referenced by the applicant (RCI 2023hh). The applicant stated that this approach has been accepted by numerous CEQA lead agencies; however, no supporting references were provided.

The applicant states in the opt-in application, Section 5.2.1.1, that the San Joaquin Valley, including Fresno County, is one of the most productive agricultural areas in the world (RCI 2023nn). However, the area continues to see losses of farmland to traditional development in areas where soils with excess salinity have been left fallow (California Department of Conservation (DOC) 2015). The California Department of Conservation (DOC) identified Fresno County as the largest example of an area where high-quality agricultural lands are being reclassified to grazing lands or lower-quality agricultural lands (DOC 2015). Specifically, this is the case in western Fresno County, where agricultural land is intermittently not irrigated during dry years, depending on the availability of water supplies (DOC 2015). Recent drought has forced farmers in Fresno County to fallow hundreds of thousands of acres (UC Berkeley 2016). Westlands Water District, which currently owns a majority of lands within the project site, is actively working to retire 100,000 acres of agricultural land within its boundaries, including the 9,100 acres on which the project would be located. The goal is to reallocate water resources to agricultural lands which are not impaired by issues such as high soil salinity (Westlands Water District GSA and County of Fresno GSA-Westside 2022). This retirement of agricultural land will occur regardless of the implementation of the proposed project. Another 500,000 acres of agricultural land in the San Joaquin Valley is expected to be retired in compliance with the Sustainable Groundwater Management Act (RCI 2023nn).

Direct and Indirect Impacts. The construction of the proposed project could result in direct impacts to this species including the degradation of foraging habitat, disturbance caused by increased human presence, noise, vibration, and fugitive dust. In addition, there is potential for direct impacts such as potential mortality due to construction activities, habitat loss or fragmentation, displacement, and disruption of movement. Indirect impacts to foraging habitat could include alterations to existing topographical and hydrological conditions, increased erosion and sedimentation, and the establishment or spread of invasive plants or noxious weeds. Furthermore, changes to soil conditions, such as compaction, could reduce burrowing opportunities for small mammals and degrade existing habitat quality by reducing foraging opportunities.

Suitable foraging habitat for Swainson's hawk consists of grasslands and agricultural land. Ground clearing and construction activities would result in the loss of foraging habitat for this listed species. The project site for the solar facility and other jurisdictional components currently supports minimal active agriculture and primarily consists of barren, regularly disked land with little to no vegetative cover, and no grasslands. However, as recently as 2020, the site was used to cultivate winter wheat, barley, cotton, onions, tomatoes, pistachios, and garlic, with approximately half of the project site left fallow (RCI 2023hh). The absence of vegetation reduces the availability of small prey essential to Swainson's hawks and other foraging raptors, resulting in habitat of moderate foraging quality (RCI 2023hh). To address this, the applicant's mitigation strategy, outlined in the Swainson's Hawk Conservation Strategy

and the Vegetation Management Plan, aims to enhance foraging habitat within the solar development areas of the project.

During construction, the project would temporarily impact up to 9,500 acres of moderate quality foraging habitat. However, 159 acres of this total would be for development of the PG&E utility switchyard (non-jurisdictional component and is not suitable habitat for foraging Swainson's hawk (IP 2024q). Development of the jurisdictional components of project would result in the direct permanent loss of approximately 308 acres of foraging habitat (RCI 2024ww). Revegetation would occur in all undeveloped portions of the project site, including the solar facility, specifically under solar panels but would exclude access roads and areas that will have concrete or gravel foundations including the BESS area, step-up substation, and associated buildings. Although permanent impacts are estimated to be 358 acres, the applicant's foraging analysis conservatively assumed a worst-case scenario where approximately 4,818 acres of foraging habitat would be unsuitable for foraging during operation due to panel coverage with panels lying flat at the sun's zenith (RCI 2024ww; RCI 2023hh). However, again these amounts factored in the PG&E utility switchyard, which would include 50 acres of permanent development.

This conservative "worst case" analysis is based on the specific panel size and layout of the PV development areas. Each 7.5-foot-wide panel rack, when in its horizontal position, would be separated by a 10.5-foot-wide open row. This would result in an approximate panel coverage of 42% within the PV development footprint. Preliminary engineering assessments have determined that coverage could be up to 48% at horizontal, and therefore, calculations have assumed 48% as the worst-case scenario. When applied to the total PV development area of 9,120 acres, this amounts to 4,378 acres of panel cover at horizontal (peak cover) position. Therefore, during operation the applicant estimated the total impact of 4,818 acres of Swainson's hawk foraging habitat when combined with other project infrastructure, when covered at a maximum, when PV modules are fully horizontal (RCI 2023hh). Due to the long-term temporary loss of foraging habitat during the construction phase of the project (construction would occur over 36 months) and prior to site restoration, and the estimated loss of up to 48% of the site during operation, staff determined that the overall consideration of the entire project footprint as a loss of foraging habitat would be appropriate to determine mitigation. While there would be temporary and/or permanent impacts to 159 acres for the PG&E utility switchyard these areas were determined to not be suitable foraging habitat for the species. Therefore, staff determined that mitigation would not be appropriate for the loss of foraging habitat for Swainson's hawk in this area. There would be temporary and/or permanent impacts to 9,345 acres for the jurisdictional components of the project site, see Table 2 in Data Request Response SUP DR BIO-1 (RCI 2024ww).

Mitigation Strategy. The applicant proposed implementation of a Swainson's Hawk Conservation Strategy and the Vegetation Management Plan in lieu of purchasing off site compensatory mitigation or offset by purchasing credits at a CDFW-approved

bank based on acreage of impact and vegetation composition. Staff reviewed the applicant's mitigation strategy, as outlined in the Swainson's Hawk Conservation Strategy and the Vegetation Management Plan in consideration of these factors (RCI 2024u). These management plans were submitted by the applicant as proposed mitigation measures in DR BIO-41 and DR BIO-42 in Data Request Response Set 4 (RCI 2024u). The applicant states that these plans provide both short-term and long-term conservation.

The applicant considers that the "short-term" measures would address potential impacts to nesting and temporary loss of foraging habitat during construction through preservation of existing nest trees, planting of new trees, use of temporary nest structures, and implementation of construction buffers. The "long-term" measures are designed to address potential cumulative impacts and "promote Swainson's hawk population stability and growth" as well as address impacts from "some" O&M phase activities. The applicant determined this would be accomplished through implementation of a vegetation management plan, weed management, monitoring and management of nest trees and artificial nest structures, and implementation of an independent research program under Dr. Steven Grodsky of Cornell University (RCI 2024u). The goal of the research program is to confirm the efficacy of the proposed conservation strategy and vegetation management plan, inform adaptive management procedures, and establish standard procedures for habitat management on renewable energy projects in the Central Valley (RCI 2024u).

Although there are limited studies documenting Swainson's hawk foraging behavior among solar arrays, preliminary studies appear promising. An "observational study" conducted in Sacramento County in four vegetated solar PV projects, the largest of which was approximately 200 acres, found that Swainson's hawks used solar arrays and active agricultural fields more often than expected when compared to their general availability (Estep 2013). The same author largely replicated this study again in 2021 and found that solar array fields were being used preferentially as compared to other land cover types (irrigated and dry pasture and irrigated cropland) (Estep 2021).

CEC staff has considered the approach to mitigation, as proposed by the applicant, and has determined that avoidance, minimization, and mitigation to a state-listed species is necessary under CESA and CEQA, and that successful implementation of a conservation strategy for Swainson's hawk that includes a vegetation management plan of the site would substantially minimize impacts to Swainson's hawk, and form part of the mitigation necessary to mitigate take of the species pursuant to CESA. In addition, staff considered that, if required, any off-site compensatory habitat purchased by the applicant may not provide foraging habitat considered of equal or greater quality compared to the habitat that could be established on-site after implementation of the proposed mitigation measures. These measures, in addition to revegetation, contain provisions for weed management as well as the planting and maintenance of suitable nest trees for Swainson's hawk.

Staff has considered all these factors and has incorporated the applicant's proposed mitigation measures, which include implementation of the Swainson's Hawk Conservation Strategy and the Vegetation Management Plan, as appropriate, into staff's proposed COC **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan). The proposed mitigation is intended to ensure that permanent grassland vegetative cover would be established over the project site beginning with construction, with the goal of preserving and enhancing existing habitat. This habitat would be comprised of native and naturalized forbs and grasses, along with tree plantings, and would be managed for weeds (RCI 2023hh). Staff's proposed COC **BIO-9** would require revegetation and maintenance of the site to promote Swainson's hawk and burrowing owl habitat, direct weed management activities, implement wildlife sampling to determine if revegetation is effective on Swainson's hawk foraging behavior along with performance of other data collection activities to inform a research program, and install artificial nest structures to facilitate foraging, among other beneficial activities. Implementation of these measures would also reduce impacts from loss of foraging habitat for birds and common wildlife.

The Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan (**BIO-9**) seeks to ensure that the direct and indirect impacts of the project to Swainson's hawk are temporary, significantly reduced, less than significant under CEQA, and fully mitigated. The Vegetation Management Plan component of COC **BIO-9** would be to guide successful revegetation of the project site to facilitate effective weed control, increase nesting habitat which is a limited resource in this part of the Swainson's hawk range, and to improve foraging habitat for the Swainson's hawk over baseline conditions.

However, additional permanent protection and perpetual management of compensatory habitat may be necessary and required pursuant to CESA to fully mitigate project-related impacts of the taking on the Swainson's hawk that will result from implementation of project, if implementation of these conceptually approved management plans for Swainson's hawk do not meet identified success criteria (**BIO-9**). Therefore, staff recommends COC **BIO-11** (Swainson's Hawk Conservation Easement and Revegetation Security), which would establish a Security amount, required prior to start of construction, to ensure that adequate funding is available to support the success of COC **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan). As stated above, COC **BIO-11** ensures that financial resources would be available to fulfill the mitigation requirements for Swainson's hawk foraging habitat, in the event the project owner fails to fulfill its obligations.

Staff's determination of the appropriate mitigation approach is based on factors including an assessment of the importance of the habitat in the project site, the extent to which project activities would impact the habitat, and the estimate of the protected acreage required to provide for adequate compensation. The entire project site was considered moderate quality foraging habitat in the applicant's foraging

habitat study (RCI 2023rr). Of this, 4,818 acres was considered, as a conservative estimate of permanent loss of forage cover and 9,510 would be subject to temporary construction impacts (RCI 2023rr). The PG&E utility switchyard was not considered suitable foraging habitat for the species. As stated above, for the jurisdictional components of the project site, temporary construction impacts would total 9,345 acres (IP 2024n).

To be considered successful, the mitigation efforts would need to meet success criteria that would be at least as stringent as those established in the draft Swainson's Hawk Conservation Strategy and Vegetation Management Plan provided submitted by the applicant. The final Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan would be subject to review and approval by the CPM, per COC **BIO-9**. The success criteria would establish specific requirements for tree survivorship, vegetative cover, invasive species control, as well as occupancy and use by foraging Swainson's hawk. Under CESA both temporary and permanent impacts to a species must be considered when determining compensatory mitigation so staff has addressed both permanent and temporary impacts in the mitigation approach.

In order to determine an appropriate amount to hold as Security for **BIO-11**, staff had to determine an appropriate mitigation ratio. Ultimately, staff determined that 0.25:1 compensation ratio would appropriate for the type, extent, and significance of the impact on the Swainson's hawk and its habitat. Multiple factors were considered by staff to arrive at the 0.25:1 compensation ratio. A key consideration was the size, type, location, and quality of compensatory habitat that is likely to be purchased. For projects within one mile of an active nest site, CDFW may recommend that one acre of habitat should be preserved for every acre impacted depending on the project impacts (CDFG 1994). Higher mitigation ratios may occur in areas with unique ecological considerations, such as Antelope Valley or for projects that are smaller. In these cases, high mitigation ratios could be used to overcome certain obstacles, such as areas where, for example, parcel sizes under a certain amount are not available on the market for sale. For example, in the City of Elk Grove, California, the City Council noted that the California Department of Fish and Game (CDFG), now CDFW, had determined that the minimum viable parcel of land considered suitable for foraging habitat for the Swainson's hawk was 5 acres (City of Elk Grove 2010), whereas the City Council further noted that acquiring easements for less than 40 acres may have been infeasible at the time. If smaller parcels are purchased, they may provide fragmented and/or low quality habitat relative to the existing population of Swainson's hawks, and limited connectivity within the regional landscape. In this particular case, with the volume of impacted Swainson's hawk foraging habitat, it is highly unlikely that offsite compensatory mitigation lands would be found in large contiguous parcel that would offer a higher ecological value to the species.

Additionally, the success of the revegetation plan would depend on the framework developed by the applicant, which is designed as a scientific experiment. The site is

currently largely bare, disked earth, of low to moderate quality foraging habitat. The habitat uplift anticipated from successful implementation of the revegetation program would render the site higher quality foraging habitat than what currently exists on site and what likely could be purchased off site. This is also partly due to the fact that at the initial stages of the project, artificial irrigation could be used on the project site, promoting revegetation efforts and attracting a suite of species in the food web and supporting biodiversity, versus the likelihood that purchased off site compensatory habitat could likely consist of dry, tilled lands. Therefore, the 0.25:1 ratio would be appropriate for this size of parcel and the potential uplift from the revegetation efforts, as part of **BIO-9**.

To be considered successful, the mitigation efforts would need meet success criteria that would be at least as stringent as those established in the draft Swainson's Hawk Conservation Strategy and Vegetation Management Plan provided submitted by the applicant. The final Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan would be subject to review and approval by the CPM, per COC **BIO-9**. The success criteria would establish specific requirements for tree survivorship, vegetative cover, invasive species control, as well as occupancy and use by foraging Swainson's hawk.

Therefore, after weighing the above factors, staff considers the appropriate compensatory ratio to be set at a 0.25:1 ratio, meaning that for every acre of impact or loss, 0.25 acres of compensation will be provided. This would amount to 2,336 acres based on the following:

- Total Acres for Security Calculation = $0.25 \times 9,345$ (Total Acres for Jurisdictional Components of the Project) = 2,336 Acres.

The Security amount was determined to be \$8,047,609.31 and would be required to be provided in the form of an irrevocable letter of credit or another form of Security approved to the CPM prior to start of construction, as proposed in **BIO-11**. The project owner would also be required to set aside a Perpetual Tree Protection Easement, which is discussed further under the "Swainson's Hawk – Nesting" subsection below. The project would be required to meet habitat restoration and maintenance benchmarks, including nesting tree survivorship, vegetative cover, invasive species control, and Swainson's hawk habitat use. The success criteria would be at least as stringent as those in the draft plans provided by the applicant, to be submitted under **BIO-9**, and ensure revegetation success for the duration of the project license.

The release of the Security would be contingent on the following recommended conditions in **BIO-9**: Security Release:

- The project owner would need to demonstrate compliance with all success criteria through five years of post-construction monitoring. A formal request for Security

release would be submitted with supporting documentation in the Year 5 monitoring report.

- If the project fails to meet success criteria due to environmental factors (e.g., drought, unforeseen ecological challenges), the project owner may request an extension, providing data to justify additional time.
- If the success criteria are not met after five years of monitoring, or alternate time frame approved by the CPM, then the project owner must acquire and protect off-site compensation lands at a 0.25:1 ratio for a total of 2,336 acres (or as specified in **BIO-11**).
- Alternatively, the project owner may request to terminate the Conservation Strategy and purchase compensation lands instead, subject to CPM approval.

In addition, the applicant has requested take authorization for Swainson's hawk, a species listed as threatened under CESA (IP 2024pTN 260669, IP 2024qTN 260670, IP 2024r). As the CEC has in-lieu permitting authority, staff has incorporated incidental take permit conditions into the project's conditions of certification, consistent with LORS. These measures have been incorporated into staff's proposed COC **BIO-10** (Swainson's Hawk Impact Avoidance, Minimization, and Mitigation Measures for Take) which requires measures such as trash abatement to deter predators, dust and erosion control, clear delineation of project boundaries and sensitive habitats, and other actions to minimize impacts on Swainson's hawk and their habitats during construction activities. To avoid and minimize impacts, staff also proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the "Foraging Birds and Common Wildlife" subsection.

Implementation of staff's proposed COCs **BIO-1** to **BIO-7** and **BIO-9** to **BIO-11**, would substantially minimize impacts to Swainson's hawk and their foraging habitat. Staff has determined that project impacts would be minimal and would not cause a significant negative impact on the species' survival or recovery. These proposed conditions of certification would provide measures necessary to mitigate for impacts to the species pursuant to CESA. CEC staff have concluded that this mitigation approach ensures long-term protection for this species and its foraging habitat and impacts would be less than significant.

Burrowing Owl – Foraging. Burrowing owls were observed in larger irrigation ditches, at the ends of irrigation piping, or along the edges of dirt roads and have been documented to be present at the project site year-round (breeding and foraging) during reconnaissance surveys and site inspections (RCI 2023rr). Nine individual burrowing owls were observed in the solar facility location. Fifteen active or potentially active burrows, and a pipe showing signs of active use, were observed on the north-central boundary, central portion, southeastern, and southern boundaries of the solar facility (RCI 2023rr). During a site visit on October 17, 2024, CEC staff noted a single owl located along a berm with burrows on the perimeter of the solar facility footprint.

As part of the applicant's proposed Vegetation Management Plan, included as Appendix D in Appendix V of the opt-in application, sheep grazing would be utilized as one of the methods to help control weeds under the solar arrays (RCI 2023hh). Grazing as a vegetation management tool can be beneficial to many wildlife species including burrowing owl. Burrowing owls prefer areas where grasses and forbs are kept low (Dechant, J.A. et al 1999). Staff found no evidence of widescale mortality or burrow collapse resulting from sheep grazing activities. Due to their lighter weight, sheep would be less likely to collapse a burrow compared to larger grazing animals like cattle (Holmes et al. 2003).

Direct and Indirect Impacts. Direct impacts to burrowing owls include the loss or degradation of foraging habitat resulting from vegetation clearing or ground disturbance, removal or disturbance of vegetation, including mowing, injury or mortality from collisions with vehicles or construction equipment. Other direct impacts include disturbance from increased noise levels from heavy equipment, increased vehicle traffic, increased human presence, and exposure to fugitive dust, and long-term human presence associated with the 18-to-36-month construction schedule. Indirect impacts include the loss or degradation of foraging habitat due to the spread of noxious and invasive weeds, soil erosion, exposure to hazardous materials from construction, and altered plant community composition caused by operation and maintenance.

Mitigation Strategy. CEC staff have determined that mitigation for impacts to foraging habitat for burrowing owl, a state-listed candidate species, is necessary under CESA and CEQA to offset habitat loss and fully address project-related impacts to the species. The applicant has requested take authorization for burrowing owl, candidate for listing, which is afforded the same protections as a threatened or endangered species under CESA (IP 2024p, IP 2024q, IP 2024r). Staff has incorporated incidental take permit conditions, consistent with applicable LORS, as part of the take authorization under the CEC's in-lieu permitting authority for the burrowing owl. These measures have been incorporated into staff's proposed COC **BIO-12**, (Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures), which requires pre-construction surveys, avoidance of occupied burrows, monitoring during construction, among other measures to minimize harm to burrowing owls.

However, the likely use of the project site by burrowing owl after construction is uncertain as successful implementation of BIO-9 does not ensure burrowing owl foraging success, as BIO-9 is specifically tailored for Swainson's hawk. Therefore, CEC staff, have determined that permanent protection and perpetual management of compensatory habitat is necessary and required pursuant to CESA to fully mitigate project-related impacts of the taking on burrowing owl. Staff made this determination based on project-specific factors including an assessment of the habitat's importance in the project area, the extent to which the project would impact the habitat, and an estimate of the protected acreage required to provide for adequate compensation for

the species. Therefore, CEC staff have proposed that the project owner be required to fulfill one of the following mitigation obligations:

1. Purchase a minimum of 200 acres of burrowing owl conservation bank credits approved in advance by CPM pursuant to the COCs, or
2. Provide for both the permanent protection and perpetual management of 200 acres of habitat management lands.

These options are included as part of staff's proposed COC **BIO-13**, (Burrowing Owl Habitat Compensation). This COC would also establish Security in the amount of \$1,741,117.00, required prior to start of construction, to ensure that adequate funding is available to purchase and manage lands in perpetuity for the burrowing owl. The Security would be returned to the project owner upon completion of the requirements of **BIO-13**, including the purchase of adequate compensation lands or bank credits, as detailed above.

Staff made this determination based on several factors inherent to the site itself, and the way that burrowing owl interact with and utilizes the site. This includes the geographic location of burrowing owl on the project site, predominantly located on the perimeter of the site where it is assumed that offsite territory also exists, with one owl burrow in the solar field that would likely need to be collapsed as part of the project (RCI 2024ss). The construction of artificial burrows onsite, as required by staff's COCs, would also have the potential to increase burrowing opportunities. Staff also considered the low quality of the habitat for nesting and foraging, and the anticipated success and projected benefit of the onsite revegetation and weed management activities are anticipated to be beneficial to burrowing owl. Further, staff relied on data supplied from a literature review from the petition to list the species, which states that during the breeding season most foraging males focus their activities within a 600 m radius of a burrow, or within 280 acres review (Center for Biological Diversity et al. 2024). Given the potential for habitat uplift and the potential use of new artificial burrows onsite, staff reduced the compensatory mitigation requirement from 280 acres to 200 acres rather than a 1:1 ratio.

Staff determined that impacts to burrowing owl would be largely mitigated through implementation of **BIO-9**, (and financially secured through **BIO-13** in the event that revegetation fails), and that minimal offsite habitat compensation was required to fully mitigate the impact pursuant to CESA. It has been determined that 200 acres of offsite habitat compensation lands, or the equivalent 200 credits from an approved mitigation bank, would be sufficient to provide full mitigation. As burrowing owl is candidate species under CESA, staff expects that mitigation banks will evaluate and potentially adjust their credit inventories to align with evolving regulatory requirements and conservation needs.

To avoid and minimize impacts, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the

“Foraging Birds and Common Wildlife” subsection. Staff also recommends implementation of the **BIO-9** (Swainson’s Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan) which requires revegetation and maintenance of site to promote Swainson’s hawk habitat, and may also promote burrowing owl habitat, and **BIO-13** to mitigate significant impacts to burrowing owl and their foraging habitat. Staff has reviewed the applicant’s proposed Vegetation Management Plan, discussed above, and has incorporated the applicant’s mitigation measures, as appropriate, into staff’s proposed Condition of Certification **BIO-9** (Swainson’s Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan) The implementation of the **BIO-9** including measures to revegetate and manage the vegetation on site, would reduce impacts to the burrowing owl and its foraging habitat.

With implementation of staff’s proposed COCs **BIO-1** to **BIO-7**, **BIO-9**, **BIO-12**, and **BIO-13**, impacts to burrowing owl and their foraging habitat would be reduced and full mitigation under CESA would be provided. CEC staff conclude that this mitigation approach mitigates for impacts to foraging habitat for this species and impacts would be less than significant.

San Joaquin Kit Fox

A focused habitat assessment for San Joaquin kit fox, or SJKF, was submitted by the applicant as part of the opt-in application (RCI 2023rr). The assessment included a reconnaissance-level field survey conducted on December 8, 9, 13, and 14, 2022 within the project site and a desktop evaluation of habitat within 5 miles, or the average dispersal distance of San Joaquin kit fox from its natal habitat. The applicant’s Biological Study Area (BSA) included the approximately 9,500 acres (encompassing all project components, including the gen-tie line corridor) and 100-foot survey buffer where accessible (RCI 2023rr).

As stated in Appendix Q-6 “Habitat suitability for SJKF was modeled within the species’ historical range by Cypher et al. (2013) and was used to analyze habitat conditions for SJKF within the Project and the 5-mile radius. In brief, Cypher et al. (2013) modeled habitat suitability using remotely sensed measurements of three habitat attributes considered most important for SJKF. These attributes were (1) land use/land cover, (2) terrain ruggedness, and (3) vegetation density. A GIS model of land use/land cover was assigned values of 1-100 (with 100 being the most suitable) based on prior SJKF habitat use studies; topography ruggedness was based on a 100-foot elevation interval; and remotely sensed Moderate Resolution Imaging Spectroradiometer (MODIS) imagery was used for vegetation density (RCI 2023rr),”

The San Joaquin kit fox habitat assessment concluded that the majority of the BSA is not suitable for San Joaquin kit fox occupation and that the species was not expected to occur in any portion of the solar facility location, or other jurisdictional components, and that no suitable habitat was present within the project site. The parcel currently proposed for the PG&E utility switchyard (non-jurisdictional component) was instead

identified as the “substation” in the habitat assessment and is discussed below under the “PG&E Utility Switchyard and Downstream Network Upgrades” subsection. However, there is habitat that was identified as both “moderate” suitability and “high” suitability within the BSA, specifically 100-foot survey buffer, and immediately adjacent to the northeast corner of the solar facility site.

While the project site does not contain any known dens for these species they do occur in the area and may wander near and/or on the project site during construction, particularly west of I-5, along the gen-tie line, near where they have been previously recorded in the Lillis Ranch topographical quadrangle. Since the home range for this species has been documented to vary with prey density, staff cannot ascertain if any home ranges overlap the proposed project. Staff further notes the closest CNDDDB records were from the 1980’s and located west of the PG&E utility switchyard near the base of the Ciervo Hills. However, there are 2 CNDDDB records that include individuals detected along the California Aqueduct and were detected between 7 and 12 miles from the gen-tie line corridor on the east side of I-5, both in 1997 (CNDDDB 2025). San Joaquin kit fox, in particular, are curious about construction sites due to the presence of food waste and trash, open ditches, and staging areas with piping. San Joaquin kit fox are small and have been found in pipes that are no more than 4” diameter and are known to take refuge in construction piles at staging areas.

Direct impacts include the loss of individuals resulting from construction activities (crushing or entombing in burrows), vehicle and construction vehicle strikes, increased levels of fugitive dust, noise, and increased human presence. Indirect impacts to San Joaquin kit fox include alterations of soils, such as compaction that could preclude burrowing, alteration in prey base, and the spread of invasive plants. Displacement of the species into adjacent habitat may also increase the risk and spread of diseases. Operation impacts include risk of mortality by vehicle strikes on access roads by maintenance personnel, the spread of invasive plants, and disturbance due to increased human presence. These are discussed further below in the “Operation” subsection. These potential impacts would be considered significant if the species were to occur on the project site and take of this federally listed species were to occur and therefore require mitigation and full avoidance of take.

To avoid and minimize impacts, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the “Foraging Birds and Common Wildlife” subsection. The applicant proposed measures to reduce potential impacts to San Joaquin kit fox, and staff has incorporated the applicant’s mitigation measures, as appropriate. Staff recommends COC **BIO-15**, (San Joaquin Kit Fox Avoidance and Minimization Measures), which would ensure full avoidance of take of this species and includes requirements for pre-construction survey as well as establishment of no-disturbance buffers, if detected. Staff’s proposed COC **AQ-SC3** (Construction Fugitive Dust Control) would enforce on-site speed limits which would reduce impacts to the species from construction vehicles, see **Section 5.1, Air Quality** for a further discussion.

In addition, staff recommends COC **BIO-9**, (Swainson's Hawk Foraging Habitat Revegetation and Management Plan), revegetation and maintenance of site to promote Swainson's hawk and burrowing owl habitat which could also benefit the San Joaquin kit fox, by promoting vegetation growth which would support prey species. Staff also proposes COC **BIO-11**, (Swainson's Hawk Conservation Easement and Revegetation Security), which would establish a Security amount, required prior to start of construction, to ensure that funding adequate is available to support the success of COC **BIO-9**. Further, the presence of a biologist during helicopter operations as mentioned in the Helicopter Use Plan may avoid impacts by ensuring that the Helicopter Landing Zone does not impact dens or burrows, per staff's proposed COC **WORKER-SAFETY-1**. Implementation of the above measures would avoid impacts to San Joaquin kit fox from construction of the project.

American Badger

American badger is known to occur within the solar facility location and sign was detected during the applicant's surveys. This species has the potential to occur in all areas of the project site, including the other jurisdictional components, in areas where prey species and/or suitable denning habitat is present (RCI 2023w).

Direct impacts may include the loss of habitat, loss of individuals of this species due to construction activities, including the risk of crushing or entombing in burrows, vehicle and construction equipment strikes, increased levels of fugitive dust, noise, and increased human presence. Indirect impacts to American badger include alterations of soils, such as compaction that could preclude burrowing, alteration in prey base, and the spread of invasive plants and noxious weeds, as well as night lighting. These potential impacts would be considered significant and therefore require mitigation.

To avoid and minimize impacts, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the "Foraging Birds and Common Wildlife" subsection. The applicant proposed mitigation measures which included avoidance and passive relocation measures for American badger. Staff reviewed the applicant's proposed mitigation and incorporated the applicant's measures, as appropriate, into staff's proposed COC **BIO-14** (American Badger Avoidance and Minimization Measures), to avoid impacts to American badger in construction areas and includes the implementation pre-construction surveys, implementing passive relocation and burrow exclusion, as appropriate, and establishing exclusionary buffers outside of active construction zones. Staff's proposed COC **AQ-SC3** (Construction Fugitive Dust Control) would enforce on-site speed limits which would reduce impacts to the species from construction vehicles. In addition, staff recommends COC **BIO-9**, (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan), revegetation and maintenance of site to promote Swainson's hawk and burrowing owl habitat which would also benefit the American badger. Implementation of COC **BIO-11** (Swainson's Hawk Conservation Easement and Revegetation Security) ensures mitigation measures for habitat loss are

successful and serves as a financial assurance to ensure the implementation of mitigation measures outlined above, under **BIO-9**. Further, the presence of a biologist during helicopter operations as mentioned in the Helicopter Use Plan may avoid impacts by ensuring that the Helicopter Landing Zone does not impact dens or burrows (**WORKER-SAFETY-1**). Implementation of the above measures would reduce impacts to American badger from construction of the project to less than significant.

Nesting Birds

The project site provides breeding habitat for a variety of resident and migratory bird species. Nearby water sources, such as Cantua Creek, along with man-made irrigation ditches and basins provide essential resources used by birds. Impacts from loss of foraging habitat was discussed previously, above under the "Foraging Birds and Common Wildlife" subsection. Impacts to nesting Swainson's hawk and burrowing owl are discussed above, under the "Burrowing Owl – Nesting" and "Swainson's Hawk – Nesting" subsections. The following subsection discusses all other common and special-status nesting bird species.

Common and Special-Status Nesting Birds, Including Tricolored Blackbird.

Special-status species, including white-tailed kite, California horned lark, tricolored blackbird, and loggerhead shrike, are known to occur in the project vicinity based on a literature review and were documented as nesting species in the CNDDB query for the project,). refer to **Table 5.2-1B** for a complete list of species with the potential to nest in the project site and vicinity. Nesting opportunities include trees, transmission towers, and retired and managed agricultural land (IP 2024p). In addition, birds could nest along irrigation ditches and other patches of suitable nesting habitat within and adjacent to the project site. However, the majority of the site is retired agricultural lands which are tilled and disked to bare soil to reduce the proliferation of weeds which reduces nesting opportunities.

Direct and Indirect Impacts. Direct impacts to nesting birds or raptors would be similar to those described for common wildlife, see above under the "Foraging Birds and Common Wildlife" subsection. Construction of the project could result in the loss of nesting habitat and disturbance from construction activities. Construction during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. Vegetation removal during construction could result in the direct loss of birds or eggs. Small, well-hidden nests could also be subject to loss during construction of the project. In addition, increased levels of noise from heavy equipment, increased human presence, and exposure to fugitive dust could displace native and migratory birds. Habitat fragmentation, degradation and shifts in vegetative structure would also directly affect nesting birds.

In addition, noise and night lighting have been demonstrated to adversely affect behavior, reproduction, and increase the risk of predation. See the "Noise" and "Night Lighting" subsections below for a further discussion of these impacts. Indirect impacts

to nesting birds could include the loss of habitat due to the colonization of invasive plants and noxious weeds and a disruption of breeding or foraging activity due to facility maintenance. Weed abatement and maintenance activities would likely limit the use of some areas as foraging or nesting habitat.

Depending on the species, birds may nest close to construction activities on the ground near equipment, within open piping, or on idle construction equipment. As described in the Final Staff Assessment (FSA) for the Hidden Hills Solar Electric Generating System (11-AFC-2), at the time of publication of the FSA in 2012, staff had recently observed nesting activity at several solar and transmission line developments in the Mojave and Colorado Desert and within the Carrizo Plain. In these locations birds nested on the ground near solar panels, vehicles, foundations, construction trailers, and other equipment left overnight or during a long weekend. In areas where construction was phased (i.e., footings, or tower structures) birds quickly utilized these features as nest sites. Bird species that nest low to the ground are susceptible to population declines due to changes in predation pressures and increased human disturbances, including traffic (Emlen 1974). Although the perimeter fence for the solar facility has been designed to be wildlife friendly by being raised up from ground level, the placement of perimeter fencing would also degrade existing habitat value for some wildlife. The perimeter fence could provide roosting opportunities for some disturbance-tolerant birds, such as common raven, which can result increased predation risk in adjacent lands. In addition, improper trash management on the project site could attract predators, such as the common raven and coyote.

The support structures for the PV panels would consist of steel piles (e.g., cylindrical pipes, H-beams, helical screws, or similar structures). These piles would typically be spaced 18 feet apart. For the tracking system, piles would be installed to a height of approximately 4 to 6 feet above grade (minimum 1 foot clearance between bottom edge of panel and ground but could be higher to compensate for terrain variations and clearance for overland flow during stormwater events) (RCI 2023ff). As documented by the Audubon Society in California, cylindrical pipes may attract birds, among other species (Audubon 2012). Cylindrical pipes potentially lead to accidental entrapment and mortality or attract nesting birds to unsuitable or hazardous locations.

As described above, the construction activities associated with the project are expected to exclude some species of birds that are less tolerant of human disturbance, such as northern flicker and horned lark (depending on the level of activity). However, other bird species that are more tolerant of human disturbance would likely nest in the project area during construction in areas with suitable conditions, such as open disturbed areas or man-made structures. These include common raven, killdeer, mountain plover, and other common and special-status species. In addition, staff determined that suitable nesting cover for a tricolored blackbird colony may be present within or near the site, particularly in agricultural areas where irrigation ditches and man-made basins may provide adequate nesting habitat, such as willow, tule, and other riparian vegetation, including Basin 12 identified in the aquatic resources delineation (IP 2024q). This is

discussed in detail above under the “Tricolored Blackbird” subsection in the species accounts.

Mitigation Strategy. Staff’s review of the opt-application indicates foraging opportunities for tricolored blackbird may occur in the project vicinity, including grain, hay, and wheat fields, with agricultural uses mapped within one mile of the site and a 0.25-mile buffer for linear facilities. Therefore, while there are no current records for the species, there is the potential for the species to occur if nesting and foraging conditions are favorable. The applicant did not request take for this species as they determined that the project site not expected to support nesting habitat for the species and no compensatory mitigation or Incidental Take Authorization would be necessary for tricolored blackbird (TN 258571). Therefore, take of tricolored blackbird must be avoided and requires mitigation to comply with CESA.

To minimize direct impacts on nesting birds, the applicant has proposed mitigation measures to avoid and reduce project-related effects. These measures include requirements to conduct pre-construction nesting surveys to identify active nests of nesting birds and raptors, and the establishment of avoidance buffers around active nests. Buffer distance would range from 250 to 500 feet around active nests depending upon the species. The applicant also proposed that surveys may be conducted in phases consistent with construction activity schedules. While the approach proposed by the applicant is valid, the implementation may be difficult due to the scale of the project (i.e., 9,000+ acres), the extended 36-month construction schedule, and the numerous common birds expected to nest within the area prior to and during construction. Staff considers it highly unlikely that nesting birds could be completely avoided if clearing and grubbing activities take place during the nesting season.

To avoid and minimize impacts, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the “Foraging Birds and Common Wildlife” subsection. In addition, staff reviewed the applicant’s proposed mitigation measures, discussed above, and incorporated the applicant’s measures, as appropriate, into staff’s proposed COC **BIO-8** (Preconstruction Nest Surveys, Impact Avoidance and Minimization Measures (Including Tricolored Blackbird), which requires the development of a Nesting Bird Management Plan (NBMP), as part of **BIO-8** due to the large size of the site and the likelihood that pre-construction surveys would be conducted in phases. The Designated Biologist and/or Biological Monitor would conduct pre-construction nest surveys between February 1 to and September 15 if site mobilization or construction activities would initiate during the breeding season and repeat surveys after a three week period of inactivity in a given area. Staff’s proposed COC **BIO-8**, would also require surveys during the tricolored blackbird breeding season (February 1 through September 15) if construction activities will take place near suitable nesting habitat for the species. The NBMP would describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take, if any nests are found.

The applicant has proposed implementation of a Helicopter Use Plan which was included as part of Data Response Set 2 (RCI 2024k). Staff reviewed the proposed plan and incorporated the applicant's measures, as appropriate, into COC **WORKER-SAFETY-1**, which would require the development of Helicopter Code of Safe Practices to be submitted to the CPM for review and approval. Staff determined that additional measures would be necessary to avoid and minimize impacts to nesting birds from helicopter use and incorporated the requirement for a Designated Biologist(s) to monitor helicopter use to avoid avian impacts, including impacts to nesting Swainson's hawks and other avian species. If helicopter use is needed during operations, staff has proposed similar requirements for a Designated Biologist to monitor helicopter use to avoid avian impacts as part of COC **WORKER SAFETY-2**. See **Section 4.4, Worker Safety**, for a further discussion of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.

Additionally, staff proposes COCs **BIO-9** (Swainson's Hawk Foraging Habitat Revegetation and Management Plan) which requires revegetation and maintenance of site to promote Swainson's hawk and burrowing owl habitat but would also enhance nesting habitat for other special-status bird species, and COC **BIO-11**, (Swainson's Hawk Conservation Easement and Revegetation Security), which would establish a Security amount, required prior to start of construction, to ensure that funding adequate is available to support the success of COC **BIO-9**.

Implementation of these measures would reduce construction-related impacts on common and special status nesting birds, including tricolored blackbird to less than significant.

Swainson's Hawk – Nesting. As previously described in "Swainson's Hawk – Foraging" subsection, six nesting Swainson's hawk were observed during surveys (RCI 2023tt). The five nests detected on-site were located in the central to west side of the proposed PV arrays, with none observed along the gen-tie line corridor or within the PG&E utility switchyard. The sixth nest was recorded off site within the 0.5-mile survey buffer (RCI 2023hh). A total of thirty suitable nesting trees were documented on the project site.

Direct and Indirect Impacts. Direct impacts to nesting Swainson's hawk include disturbance during the breeding season from increased human presence, noise, and related construction activities. and These types of construction-related disturbances could cause a range of impacts from temporary disruption of nesting activities, such as feeding young, which could result in decreased survivorship of the local species, to complete abandonment of the nest and result in possible take of the species. In addition, nestlings could become agitated and startled by noise, increased human presence, lighting, or construction activities increasing the risk of falling from the nest and suffering injury or mortality.

Mitigation Strategy. As discussed above under the “Swainson’s Hawk – Foraging” subsection, as part of the CEC licensing process and under its in-lieu permitting authority, the applicant has applied for take authorization for Swainson’s hawk. CEC staff have determined that mitigation for impacts to nesting Swainson’s hawk, a state-listed species, is necessary under CESA and CEQA to offset habitat loss and fully address project-related impacts to the species.

The applicant’s mitigation strategy, included in the Swainson’s Hawk Conservation Strategy and the Vegetation Management Plan (RCI 2023hh) is intended to provide high quality foraging habitat within the solar development areas of the project. Staff reviewed the applicant’s proposed mitigation and incorporated the applicant’s measures, as appropriate, into COC **BIO-9** (Swainson’s Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan), which would also enhance nesting habitat and provide weed management during the life of the project. Staff’s proposed Condition of Certification **BIO-9** seeks to ensure that the direct and indirect impacts of the project to SWHA are temporary, significantly reduced, less than significant under CEQA, and fully mitigated. One of the goals of **BIO-9** is to guide successful revegetation of the project site to facilitate effective weed control, increase nesting habitat which is a limited resource in this part of the Swainson’s hawk range, and to improve foraging habitat for the species over baseline conditions at the project site.

In addition to the proposed “Swainson’s Hawk Conservation Strategy and Vegetation Management Plan” for onsite mitigation for the Swainson’s hawk, as part of **BIO-9**, CEC staff have determined that additional permanent protection and perpetual management of compensatory habitat may be necessary pursuant to CESA to fully mitigate project-related impacts of the taking on the Swainson’s hawk that would result from implementation of the project. This would be required if implementation of the conceptually approved management plans for Swainson’s hawk do not meet identified success criteria, per COC **BIO-9**. Staff proposes COC **BIO-11**, (Swainson’s Hawk Conservation Easement and Revegetation Security), which would establish a Security amount, required prior to start of construction, to ensure that funding adequate is available to support the success of COC **BIO-9**.

As stated above, **BIO-11** ensures that financial resources would be available to the CEC CPM to fulfill the mitigation requirements for Swainson’s hawk and its habitat, even if the project owner fails to fulfill its obligations. This determination is based on several factors including an assessment of the importance of the Swainson’s hawk habitat on the project site, the extent to which the project would impact the habitat, and the estimate of the protected acreage required to provide for adequate compensation. To meet this requirement, the project owner would be required to provide financial security sufficient to provide for both the permanent protection and management of 2,375 acres of compensation lands in the amount of \$ \$8,047,609.31 if **BIO-9** does not meet the success criteria. The rationale for this amount is discussed in “Swainson’s Hawk – Foraging” subsection above.

In addition, CEC staff have determined that the permanent protection and perpetual management (hereafter, Perpetual Tree Protection) of all known and potential nesting trees identified on site in 2023 surveys, in addition to all trees planted as part of the Swainson's Hawk Conservation Strategy, is necessary and required pursuant to CESA to fully mitigate project-related impacts of the taking of Swainson's hawk. The "Perpetual Tree Protection" would be in the form of a conservation easement for all known and potential nesting trees identified in 2023 surveys, in addition to all nesting trees planted as part of the Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan (COC **BIO-9**) plus a minimum 50-foot buffer from the existing outer tree dripline, or in the case of planted trees, of the projected outer tree dripline once the planted tree species reaches maximum growth. The buffer would be limited to the project site, as a conservation easement cannot be established on land outside the applicant's control. Planting areas would allow for the planting of a minimum of 30 healthy trees and these areas and tree species would be approved by the CPM. The applicant identified potential nest tree planting areas in the draft Swainson's Hawk Conservation Strategy would provide the basis for establishment of the planting areas and would be able to support 30 healthy trees (Figure 7) (TN 253021). These measures have been incorporated into staff's proposed COC **BIO-11** (Swainson's Hawk Conservation Easement and Revegetation Strategy).

Staff has incorporated incidental take permit conditions as part of the take authorization under the CEC's in-lieu permitting authority for Swainson's hawk, a state listed species. These measures have been incorporated into staff's proposed COC **BIO-10** (Swainson's Hawk Impact Avoidance, Minimization, and Mitigation Measures for Take) which requires measures such as trash abatement to deter predators, dust and erosion control, clear delineation of project boundaries and sensitive habitats, performance of nesting surveys, installation of no-disturbance buffers and monitoring, and other actions to minimize impacts on nesting Swainson's hawk during construction activities. In addition, to avoid and minimize impacts, staff also proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the "Foraging Birds and Common Wildlife" subsection.

Implementation of these comprehensive suite of measures would ensure that impacts would be less than significant. Impacts to Swainson's hawk would be avoided and minimized to the maximum extent practicable and staff's proposed COCs outline full mitigation as additionally necessary pursuant to CESA.

Burrowing Owl – Nesting. As previously described in "Burrowing Owl – Foraging" subsection, nine individual burrowing owls were observed in the solar facility location. In addition, fifteen active or potentially active burrows, and a pipe showing signs of active use, were observed on the north-central boundary, central portion, southeastern, and southern boundaries of the solar facility (RCI 2023rr).

Direct and Indirect Impacts. Direct impacts to nesting burrowing owls could include crushing of any suitable burrows, removal or disturbance of vegetation, such as

mowing, elevated noise levels from heavy equipment, increased human activity, and exposure to fugitive dust. Indirect impacts could include the loss or degradation of foraging or breeding habitat due to the colonization of invasive plants and noxious weeds, alteration of plant community composition caused by operation and maintenance activities, and long-term human presence during the up to 36-month construction period. Increased human presence from maintenance personnel during construction would flush or otherwise disturb nesting bird species, including burrowing owls.

The strategy for displacing owls depends greatly on how the owls are using the site, their number, and the timing of construction activities. For example, project construction would occur for up to 36 months and passive relocation may result in the repeated harassment of owls should the owls relocate into areas subject to later project disturbance at the project site. While construction of replacement burrows in nearby areas would have some potential benefits to the species, it is likely that burrowing owls would select available, natural burrow sites if available near their previously occupied territories. Because of the timeframe, this behavior could necessitate multiple passive relocation events for individual birds, based on pre-construction surveys, required as part of COC **BIO-12** (Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures). At present, most known locations of owls were mapped along the perimeters of the project site, but this can change seasonally. Each relocation event would stress the birds and exposes them to increased predation risk, thermal stress, and potential territorial disputes. If burrowing owls are present within or adjacent to a construction zone, disturbance could destroy occupied burrows or cause the owls to abandon burrows. Construction during the breeding season could result in the incidental take of these species thru the loss of fertile eggs or nestlings or otherwise lead to nest abandonment.

The loss of occupied burrowing owl habitat – defined as habitat known to have been occupied by owls during the nesting season within the past three years – or reduction in the number of this state-listed candidate species, either directly or indirectly through nest abandonment or reproductive suppression, would constitute take pursuant to CESA. Furthermore, burrowing owls and their nests are protected under both federal and State laws and regulations, including the Migratory Bird Treaty Act, California Fish and Game Code Section 3503.5. and CESA. As part of the CEC licensing process and under its in-lieu permitting authority, the applicant has applied for take authorization for burrowing owl.

Mitigation Strategy. To avoid and minimize impacts, staff also proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the “Foraging Birds and Common Wildlife” subsection. Impacts from noise, fugitive dust, and other impacts would also be addressed as above in the “Loss of Foraging Habitat for Wildlife” subsection.

As discussed above, under the “Burrowing Owl – Nesting” subsection, staff has incorporated incidental take permit conditions as part of the take authorization under the CEC’s in-lieu permitting authority for the burrowing owl, a state-listed candidate species. These measures have been incorporated into staff’s proposed COC **BIO-12** (Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures), which requires pre-construction surveys, avoidance of occupied burrows, monitoring during construction, among other measures to minimize harm to burrowing owls. Impacts to nesting burrowing owl would also be reduced with implementation of COC **BIO-9** (Swainson’s Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan) which requires revegetation and maintenance of site to promote Swainson’s hawk and burrowing owl habitat.

In addition, staff proposes COC BIO-13, (Burrowing Owl Habitat Compensation), which instructs the project owner to either purchase a minimum of 200 acres of burrowing owl or provide for both the permanent protection and perpetual management of 200 acres of offsite habitat management lands (as previously described in “Burrowing Owl – Foraging”).

Further, **BIO-13** would establish a security in the amount of \$1,741,117, required prior to start of construction, to ensure that adequate funding is available to ensure funding necessary to purchase offsite compensation if necessary. The CPM would hold the security.

With implementation of staff’s proposed COCs **BIO-1** to **BIO-7** and **BIO-9**, **BIO-11**, to **BIO-13**, impacts to burrowing owl and their nesting habitat would be reduced be less than significant and full mitigation under CESA would be provided. Staff concludes that this mitigation approach ensures long-term protection for this species.

Crotch’s Bumble Bee

No incidental observations of Crotch’s bumble bee were made during reconnaissance surveys or during regular inspections. The applicant did not conduct focused surveys of the project site for this species. Staff conducted a desktop bumble bee habitat assessment to evaluate the percentage of the project area that supports natural habitat, available foraging resources, and nesting and overwintering habitat. Based on a review of aerial photographs, applicant data and photos, and an October 2024 site visit, staff concurs with the applicant that the majority of the project site does not provide suitable habitat and foraging resources for Crotch’s bumble bee.

The project site is primarily fallow agricultural lands, with approximately 90% of which is primarily exposed soil and turned over regularly to reduce weeds. Any weeds or vegetation on these lands is managed through disking. The remaining 1% includes weeds that blow in and grow road edges and in roadside ditches. These communities generally do not provide the variety of native floral resources needed to support this species. Crotch’s bumble bees prefer smaller flowers that are abundant with pollen and nectar, such as milkweed (*Asclepias* spp.), chaenactis (*Chaenactis* spp.),

deerweed (*Acmispon* sp.), buckwheats (*Eriogonum* sp.), lupines (*Lupinus* spp.), clovers (*Medicago* spp.), phacelias (*Phacelia* sp.), and sages (*Salvia* spp.) which do not occur in the project area. While great valley phacelia was observed, its specific location was not documented, and given the regular field agricultural practices, it is likely that much of the area was disked. They can also forage on mustard flowers, which are widespread and grow in a variety of environments. However, as stated above the areas on site that support black mustard are regularly disked.

The project area does provide some potential nesting and overwintering habitat for this species should they occur in adjacent lands. Small mammal burrows, cavities along irrigation canals, and natural areas with woody cover, brush piles, or leaf litter could provide overwintering habitat. However, the project site is within the historic range; the species has an uncharacteristically long foraging range (6 miles). The foraging and dispersal range of bumble bees varies, and this species has been seen in patchy agricultural landscapes up to 11.5 kilometers (7.14 miles) from natural habitats, though foraging ranges is typically 1-2 km (0.6-1.24 miles) (Osborne et al 2007). The project area does provide some potential nesting and overwintering habitat for this species should they occur in adjacent lands. Small mammal burrows, cavities along irrigation canals, and natural areas with woody cover, brush piles, or leaf litter could provide overwintering habitat. This species was designated as a candidate species under CESA in September 2022 and is currently under review, which has led to temporary protections, increased scientific interest, and expanded survey efforts. As ongoing research and monitoring continue, new data may provide clearer insights into its distribution and habitat use in the region.

Direct impacts to Crotch's bumble bee, if present, could include the loss or modification of foraging and nesting habitat, disturbance or destruction of occupied nests, and impacts on individuals and/or nesting sites from exposure to human disturbance, ground vibration, fugitive dust, and other hazardous materials. Indirect impacts could include the loss or degradation of habitat from invasive plants and noxious weeds. If this species occurs in the project area or on site, any loss or disturbance to individuals or nesting colonies would be considered a significant impact. The applicant did not request take for this species and full avoidance would be necessary for Crotch's bumble bee.

To avoid and minimize impacts, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the "Foraging Birds and Common Wildlife" subsection. In addition, to avoid impacts to Crotch's bumble bee, staff proposes COC **BIO-16** (Crotch's Bumble Bee Avoidance and Minimization Measures) which would require pre-construction protocol-level Crotch's bumble bee surveys, avoidance of suitable habitat for the species within the project area during the active flight season, enforcement of speed limits, and complete avoidance of any active nesting sites. In addition, staff also proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. Staff also recommends implementation of the **BIO-9** (Swainson's Hawk

Conservation Strategy and Foraging Habitat Revegetation and Management Plan) which requires revegetation and maintenance of site to promote Swainson's hawk and burrowing owl habitat but may also benefit Crotch's bumble bee by increasing native vegetation on the site. Staff's proposed COC **BIO-11**, (Swainson's Hawk Conservation Easement and Revegetation Security), would establish a Security amount to ensure that funding adequate is available to support the success of COC **BIO-9**.

Dust control measures, as discussed in the "Loss of Habitat for Wildlife" and "Fugitive Dust" subsections would be implemented to avoid adverse impacts on this species' nectar and pollen sources both on-site and immediately off-site. These include **AQ-SC3** (Construction Fugitive Dust Control), and COC **AQ-SC4** (Dust Plume Response Requirement), see **Section 5.1, Air Quality** for a further discussion.

With implementation of staff's proposed COCs **BIO-1** to **BIO-7** and **BIO-9**, **BIO-11**, **BIO-13**, **BIO-16**, and **AQ-SC-4**, impacts to Crotch's bumblebee would be completely avoided per CESA and impacts would be less than significant.

Night Lighting

Construction activities, such as de-energizing and re-energizing existing lines along the proposed gen-tie line, and step-up substation may occur at night while electrical demand is low and would require lighting for safety. Construction is expected to occur Monday through Friday from 6:00a.m. to 7:00p.m. but may occur seven days a week if necessary.

Night lighting could disturb resting, foraging, or mating activities of general wildlife and special status species and make them more visible to predators. Night lighting could also attract birds and bats to areas which could result in collisions on tall structures or transmission lines. Additionally, certain lighting may attract insects which in turn may attract birds and bats to forage. To reduce impacts, the applicant has proposed to provide lighting that is shielded and pointed downward and away from the habitat outside of the project area. In addition, staff proposes to minimize impacts to nesting birds and other nearby wildlife, and to reduce the potential for avian and bat attraction and collision through implementation of COC **BIO-17**, discussed further below under the "Collisions, Night Lighting, and Attraction of Migratory Birds and Insects" subsection.

Implementation of measures proposed by the applicant would ensure areas surrounding the project remain un-illuminated (dark) most of the time, thereby minimizing the amount of lighting potentially visible off site and minimizing the potential for lighting impacts to nearby wildlife. Staff has incorporated these measures into **VIS-2** and **BIO-7** (General Avoidance and Minimization Measures, #9), see **Section 5.15, Visual Resources** for a further discussion. Staff proposes implementation of COCs **VIS-2**, **BIO-1** through **BIO-8**, and **BIO-10**, **BIO-12**, and **BIO-14** which would monitor and reduce or avoid impacts to nesting birds, burrowing owl, Swainson's hawk, and American badger, and **BIO-15** to completely avoid

impacts to San Joaquin kit fox. Implementation of these measures would reduce construction-related impacts from night lighting on common and special status nesting birds to less than significant.

Weed Proliferation

Construction activities could also result in the introduction, colonization, and spread of invasive plants and noxious weeds both on and off the project site. Many avian species rely on specific habitat types and characteristics for survival. The introduction and establishment of invasive plants or noxious weeds could displace native vegetation that is preferred or obligate habitat for many bird species. The introduction or spread of invasive plants or noxious weeds would be primarily related to the use of vehicles or equipment contaminated with non-native plant seeds. Weed seeds are often spread on equipment or clothing by management or maintenance personnel working in a project area. After project construction is complete, the temporary disturbance areas such as construction laydown and parking area(s) would be removed, and the site could potentially become colonized by invasive weeds. In addition, invasive weeds can quickly colonize disturbed areas (such as roadsides) and potentially spreading to adjacent habitats and degrading wildlife habitat for both common and special-status species. Though there is existing land cover on the project site that is dominated by invasive species, the spread of these existing species or introduction of other invasive species into native habitat in the project vicinity would be considered a significant impact.

Direct impacts could also occur if invasive plants or noxious weeds become introduced into an area or are spread from one area to another during construction of the proposed project. For example, black mustard (*Brassica nigra*), a species documented onsite (RCI 2023w), is considered a moderate threat as defined by the CAL-IPC. There are other invasive species, such as tamarisk that have been and/or have the potential to cause adverse effects in the future. The introduction or spread of invasive plants or noxious weeds would be primarily related to the use of vehicles or equipment contaminated with nonnative plant seed. Weed seeds are often spread on equipment or clothing by management or maintenance personnel. At the completion of the project the temporary disturbance areas such as construction laydown and parking area(s) would be removed, and the site could become colonized by invasive weeds or become a source of fugitive dust. In addition, weeds can quickly colonize disturbed areas (such as roadsides) and pose a risk to adjacent habitats at the conclusion of the project, simultaneously degrading wildlife habitat for both common and special status species.

The applicant has proposed weed control measures, to control black mustard and avoid the introduction of other invasive weeds, in their draft Vegetation Management Plan (RCI 2024u). This plan requires a pre-construction weed survey, vehicle inspections and cleaning, and use of weed free materials as well as other weed control measures. Staff reviewed this measure and incorporated the applicant's

measures, as appropriate, into staff's proposed **BIO-11** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan). In addition, staff proposes COC **BIO-7** (General Avoidance and Minimization Measures). These COCs would require vehicles to be fully cleaned of mud and debris, ensure erosion control measures are certified weed free, manage weeds, restore disturbed areas with native or sterile non-native seed mixes, reduce cultivation of invasive species on temporarily disturbed soils, and conduct ongoing weed identification and eradication for the life of the project.

Implementation of these measures would reduce indirect impacts from the spread of invasive plants and noxious weeds on and off the project site to less than significant.

Fugitive Dust

Fugitive dust could be generated during construction from grading, mowing, road improvements and creation, and other earth-disturbing project activities. Additionally, a helicopter may be used for gen-tie line wire stringing activities including hanging travelers, pulling conductors and optical ground wire, dead-end activities, and during the installation of bird diverters. The helicopter would be stationed at the 20-acre step-up substation laydown yard or another designated laydown yard.

During take-off and landing, helicopter rotor wash could distribute dust which may settle on plants, reducing their ability to photosynthesize as well as impact visibility for wildlife, making it difficult to see traffic or predators. Fugitive dust during construction can affect common and special-status plant species through disruption of basic photosynthesis and other metabolic processes when deposited on plants. These adverse physiological stressors result in reduced survival and reproduction (fitness). This adverse impact to native (and non-native) plant communities then disrupts the local trophic chain (a series of organisms that eat one another), and affecting wildlife species, both common and special status, that depend on these plants.

The applicant has proposed the implementation of a Helicopter Use Plan to address fugitive dust from the rotor swept area if a helicopter is used during construction of the gen-tie line. This proposed plan was included as part of Data Response Set 2 (RCI 2024k) in response to DR TRANS-5. In addition, the plan proposed use of an on-site water truck to water the helicopter landing zone (HLZ) to prevent fugitive dust. Staff proposes COC **WORKER SAFETY-1**, which would require the development of Helicopter Code of Safe Practices to be submitted to the CPM for review and approval, see **Section 4.4, Worker Safety and Fire Protection**, for a further discussion.

Staff proposes implementation of dust control measures as part of COCs **AQ-SC3** and **AQ-SC4**, as described in **Section 5.1, Air Quality**. These measures would be part of air quality requirements which would prevent the project site from becoming a source of fugitive dust.

The applicant proposed measures to reduce potential impacts to biological resources which include designating a 15 mile per hour (mph) speed limit in all construction areas, avoiding vegetation and limiting activity areas, among other best management practices that could help control fugitive dust. Staff reviewed this measure and incorporated the applicant's measures, as appropriate, into COC **BIO-7**, General Impact Avoidance and Minimization Measures, which would require that disturbance be limited to demarcated areas, minimizes soil disturbance, imposes speed limits, and requires that any soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to plants and wildlife, among other best management practices. Staff also proposes COCs **BIO-1** to **BIO-4**, which require the Designated Biologist and/or Biological Monitor to assist and advise the project owner in identification and appropriate treatment of fugitive dust.

Implementation of these measures would reduce indirect impacts associated with fugitive dust during construction to less than significant.

Stormwater Runoff

Construction activities may introduce surface contaminants to soils, such as trace spills from machinery and other chemicals used on the project site, which could impact soils and plants, and the wildlife dependent upon them.

Staff proposes implementation of erosion control measures as part of COC **WATER-1** (NPDES Construction Permit Requirements) to reduce and avoid impacts to biological and water resources. This COC would include the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and would include BMPs to specify stormwater monitoring during construction. The SWPPP would include BMPs to be implemented during construction to reduce pollutants in stormwater runoff from the construction site to ensure that project construction does not contribute to the degradation of Cantua Creek, the California Aqueduct, or other aquatic areas of the project site. See **Section 5.16, Water Resources** for a further discussion. Staff also proposes general biological conditions **BIO-1** through **BIO-7** to ensure construction activities would be appropriately conducted and monitored.

Implementation of these Water and Biological Resources measures would reduce impacts associated with stormwater runoff during construction to less than significant.

Noise

Use of construction equipment such as concrete mixer trucks, cranes, and pneumatic tools; activities such as pile driving; and helicopter use may create noise levels above the existing ambient levels. The project has proposed that construction activities would occur on-site between the hours of 6:00 A.M. and 7:00 P.M. on weekdays and between 7:00 A.M. and 5:00 P.M. on weekends.

As discussed in the **Section 5.9, Noise and Vibration**, staff determined that construction equipment typically produces noise levels between 74 decibels on the A-weighted scale (dBA) L_{eq} (i.e., flatbed truck and welder/torch) and 104 dBA L_{eq} (pile driving) at 50 feet. In addition, vibratory impacts may result from the activities and equipment mentioned above. The applicant noted that construction of each project component would be spatially distributed across the project site, and the large average distance between areas actively under construction during different phases would ensure that noise generated does not compound (RCI 2024u).

Construction noise can impact wildlife in a variety of ways, including triggering a variety of annoyance behaviors such as startle response, flight and or/avoidance of an active noisy site, as well as specific disruptions of breeding behavior by masking or distorting advertisement calls, inducing a stress response that negatively impacts fitness, cause abandonment of nests/dens or young. For example, many bird species rely on vocalizations during the breeding season to attract a mate within their territory, and construction noise could disrupt these calls and disturb nesting birds which would adversely affect nesting and other activities. Other wildlife may also be disturbed, impacting their behavior. Studies have also shown that noise levels over 60 dBA can result in nest abandonment and intense, long-lasting noise can mask bird calls which can reduce reproductive success (Dooling and Popper 2007). In addition, 60 dBA has been used by the wildlife agencies and staff as a reference point for evaluating noise impacts on wildlife. Staff considers noise levels above 60 dBA to be a significant impact to most nesting birds and had applied this threshold more broadly to sensitive wildlife in absence of other established thresholds. Special-status wildlife species such as San Joaquin kit fox, American badger, burrowing owl, nesting birds, and other special- status and common wildlife may be adversely impacted by excessive, sudden, or prolonged construction noise.

Staff proposes the following COCs to reduce noise-related impacts to special-status and common wildlife to less than significant, as described in **Section 5.9, Noise and Vibration**. Although these measures are proposed for human receptors, the adoption of these measures would also reduce impacts to wildlife. These include the following:

- **NOISE-3** would regulate and reduce noise through engineering controls such as sound barriers;
- **NOISE-5** which would ensure operation noise levels comply with occupational noise standards
- **NOISE-6** would limit helicopter operation to daylight hours; and
- **NOISE-7** would address pile driving noise to human receptors,

Additionally, staff proposes COCs **BIO-1** through **BIO-7**, as discussed above under the "Foraging Birds and Common Wildlife" subsection. Staff's proposed COC **BIO-8** would be implemented by the project owner to avoid or minimize impacts to biological resources, including migratory and nesting birds, such as tricolored blackbird, and

common wildlife. Staff proposes the following COCs to ensure impacts to special-status species, such as Swainson's hawk, burrowing owl, American badger, and Crotch's bumble bee, would also be monitored and mitigated to less than significant: **BIO-10** (Swainson's Hawk Impact Avoidance, Minimization, and Mitigation Measures for Take), **BIO-12** (Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures), **BIO-14** (American Badger Avoidance and Minimization Measures), **BIO-15** (San Joaquin Kit Fox Avoidance and Minimization Measures), and **BIO-16** (Crotch Bumble Bee Avoidance and Minimization Measures).

Implementation of the above measures would reduce construction-related noise impacts on common and special-status wildlife to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Although the PG&E utility switchyard is analyzed as part of the project pursuant to CEQA, ultimate licensing authority will fall under the California Public Utilities Commission (CPUC). PG&E would separately comply with CPUC permitting requirements for its interconnection facilities (RCI 2024u). Construction-related impacts for the PG&E utility switchyard would be covered by implementation of the standard PG&E Construction Measures (RCI 2024u). PG&E has indicated that they will implement the applicable PG&E Construction Measures as part of the construction and operation of the PG&E utility switchyard as well as for the downstream network upgrades. These upgrades would include the three alternative scenarios for fiber line communications as well as proposed upgrades at four existing PG&E substations.

The applicant provided a list of standard PG&E Construction Measures to address direct and indirect impacts to special-status plants from construction of the non-jurisdictional components of the project (RCI 2024cc). These measures would be followed by PG&E and its contractors during construction of the PG&E utility switchyard and downstream network upgrades. However, construction of the PG&E switchyard and the construction activities for the facilities and equipment installed as part of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would not be covered under the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (O&M HCP) as these do not meet the definition of limited minor new construction in the HCP. (Jones & Stokes Associates, Inc. 2006), as detailed in Data Response Set 6 - Appendix D REV 1 DR TSD-1 BRA Vol 1 (RCI 2024cc).

The construction activities associated with implementation of the three alternative fiber line scenarios and the four substations would be part of the overall O&M Program for the PG&E Transmission and Distribution System in the San Joaquin Valley (RCI 2024u). These activities would be conducted in compliance with the PG&E San Joaquin Valley O&M HCP, its Implementing Agreement and permits issued by USFWS and CDFW, under the federal ESA and CESA, as well as any applicable CEQA mitigation measures adopted in prior environmental review documents. However, if project activities may result in take of species under the federal ESA or CESA, PG&E

would need to coordinate with the USFWS and/or CDFW to obtain separate incidental take authorization for these activities, if required.

Staff has proposed modifications to the PG&E Construction Measures and/or proposed additional measures, as needed to reduce impacts to less than significant and avoid take of listed species. These measures have been incorporated into this analysis and have been numbered but otherwise retain their original order and exact language, unless noted in strikethrough or bold and underline. Where appropriate, staff has added these as recommended Mitigation Measures (MM) to avoid, minimize, or reduce impacts from construction and operation of these non-jurisdictional components of the project.

Special Status Plants and Habitat

Construction of the PG&E utility switchyard would permanently impact up to 50 acres of land and result in the removal of an almond orchard. It would also include development of disturbed/cleared areas devoid of vegetation near a transmission line to the southwest. The PG&E utility switchyard would be located adjacent to ruderal and grassland habitat at the base of the Ciervo Hills. Development of PG&E utility switchyard would include grubbing and clearing of the existing vegetation and grading of the site (RCI 2023ff). Per the opt-in application, this area of the project site has been continually disturbed by agricultural activities since at least July 2004 through July 2020. Due to ongoing maintenance and presence of the cultivated orchard, the area does not currently support any native plant species.

One special-status plant, Lost Hills crownscale, was identified to have the potential to occur during the literature review and desktop assessment, with a documented occurrence approximately one mile to the west. However, no special-status plant species, including federal or state listed plants, were identified by surveyors during reconnaissance surveys conducted in December 2022 and May 2023 as well as during ongoing biological inspections. Special-status plant species that were evaluated in this analysis are listed in **Table 5.2-1** and discussed above under the "Special Status Plant Species" subsection.

Based on habitat conditions in the project area, special-status plants are not expected to occur, and no special-status plant species are known to occur on or offsite within the 100-foot survey buffer. Therefore, construction of the PG&E utility switchyard is not anticipated to directly affect any special-status plant species. No mitigation is proposed for direct impacts to special-status plants at the PG&E utility switchyard. However, indirect impacts to adjacent special-status plant habitat could include alterations to existing topographical and hydrological conditions, increased erosion and sedimentation, fugitive dust and the establishment or spread of invasive plants or

noxious weeds. Indirect impacts could occur if special-status plants occur in the project area outside of the PG&E utility switchyard project site.

For the PG&E downstream network upgrades, the proposed fiber line and substation activities would take place within existing PG&E distribution structures, transmission routes, and substations. Construction activities would include installation of long, linear, optical ground wire (OPGW) at three alternative fiber line scenarios along existing PG&E transmission line corridors and would also involve equipment upgrade activities at three existing PG&E substations (Los Banos Substation, Midway Substation, and Gates Substation), with the work at Cantua Substation possibly necessary. Only one of the three fiber line options would ultimately be constructed. Construction work may include installing new structures, installation on existing overhead structures, or a directional bore to underground depending on the scenario selected. See the project description included in Data Response Set 6 - Appendix D REV 1 DR TSD-1 BRA Vol 1 for further information (TN 258874).

The fiber line installation would use existing power poles within the ROW, unless installation of new poles are necessary, with splice sites and temporary pull/reel sites along the transmission corridor (RCI 2024u). PG&E would use existing roads and access along the existing PG&E transmission for construction and no new roads would be constructed or improved. The installation work may require minor ground disturbance but no grading.

PG&E would use a combination of helicopter and ground crews and therefore may need to establish Helicopter Landing Zones (HLZs), which would require approximately ten 200 ft x 200 ft HLZs per scenario. The HLZs would be used for material transport and fiber line installation, with workers and equipment moved between poles by helicopter as needed. The minor upgrades to the existing 230 kV tower structures and additional work are outlined in the Project Description (RCI 2024cc). PG&E would place the HLZs to minimize potential impacts to sensitive biological resources, including avoiding locations within the grassland and atriplex scrub vegetation communities for Scenario 1 Fiber Line and Scenario 2 Fiber Line, where feasible. Therefore, project construction could result in direct impacts at the pull/splice sites and HLZs which would require minor ground disturbance in the form of drive and crush, but not grading.

No special-status plant species were found during field reconnaissance surveys conducted June 24, 25, and 26, 2024. However, these surveys were conducted near the end of the known blooming period for most species with a potential to occur and may not have captured species that bloom earlier in the season. The surveys included the three alternative fiber line corridors and the existing substations and a 100-foot buffer (RCI 2024cc). There are two sensitive plant species, San Benito poppy (CRPR 4.3) and stinkbells (CRPR 4.2), that have a moderate potential to occur in grassland habitats in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. In addition, there are two federally listed plant species, California jewelflower and San

Joaquin woollythreads with a low potential to occur in the Scenario 1 Fiber Line and Scenario 3 study areas. Special-status plant species that were evaluated in this analysis are listed in **Table 5.2-1A** and discussed above under the “Special Status Plant Species” subsection above.

There would be no impacts from work planned within the four existing PG&E substations, as these are pre-existing disturbed sites with no planned ground disturbance. Therefore, no mitigation is recommended. Installation of three alternative fiber line scenarios (i.e. Scenario 1, Scenario 2, and Scenario 3) could cause direct impacts such as loss of plants by trampling or crushing with equipment as well as soil compaction or erosion. Crushing is not likely to be an impact for installation of the Scenario 3 Fiber Line, since it entails the option of undergrounding portions of the line via trenchless technology. Construction could cause indirect impacts these species through introduction of invasive plants and noxious weeds as well as soil contamination from accidental fuel spills.

For the three alternative fiber line scenarios, if the federally listed San Joaquin woollythreads and California jewelflower or species such as San Benito poppy, and stinkbells, are present within the project disturbance area, these species could be impacted by construction activities. Additionally, any CRPR plant species with low potential to occur, as listed in **Table 5.2-1A**, could also be impacted if they are found within the project disturbance area.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to avoid and minimize direct and indirect impacts to special-status plants: Worker Environmental Awareness Training for all crew members that identifies project-specific practices being implemented to protect biological resources, Standard Construction Practices (standard construction practices to reduce the potential for environmental impacts, including requirements for post-construction restoration and erosion control), Access (to restrict vehicle and equipment use to existing roads), Trash (collection and management), Refueling (to avoid natural habitat impacts), Invasive Species (to clean vehicles and equipment of noxious weeds/seeds), Wildlife Handling (no handling of wildlife or plants species or removal from activity areas), Fugitive Dust Control (to limit speeds, apply water to disturbed areas and stockpiles, and other associated measures to control fugitive dust), Herbicide (to avoid application drift or accidental spills), and Special-Status Plants (use of a qualified biologist to conduct pre-construction surveys and implement buffers). In addition, Air Quality staff has recommended implementation of the PG&E Construction Measure for Fugitive Dust Control (to limit speeds, apply water to disturbed areas and stockpiles, and other associated measures to control fugitive dust) which is included in **Section 5.1, Air Quality**, as **MM AQ-1**. Staff reviewed the proposed measures and have

recommended Mitigation Measures (MMs) where appropriate to reduce potential environmental impacts.

As part of **MM BIO-11**, PG&E would use of a qualified biologist to conduct pre-construction surveys and implement buffers for special-status plants. However, salvage or seed collection should not take place as outlined in **MM-BIO-11** without consultation with USFWS and/or CDFW. Consultation should take place to consider alternative take avoidance measures and/or acquisition of take authorization. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. Staff modified **MM BIO-11** to ensure that salvage or seed collection would only apply to non-listed species. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address indirect impacts to special-status plants from construction of the PG&E utility switchyard. Staff recommends implementation of **MM BIO-1** to **MM BIO-5** and **MM BIO-8** to **MM BIO-10**, **MM BIO-20**, and **MM AQ-1** to reduce impacts to less than significant. Direct and indirect impacts to special-status plants from construction of the PG&E downstream network upgrades would be reduced to less than significant with implementation of **MM BIO-1** to **MM BIO-5** and **MM BIO-8** to **MM BIO-11**, **MM BIO-20**, and **MM AQ-1**.

Wildlife

San Joaquin Kit Fox

Suitable habitat for San Joaquin kit fox exists in the PG&E utility switchyard project area, immediately west of the site in adjacent habitat. Based on the applicant's San Joaquin Kit Fox Habitat Assessment, which was based on the San Joaquin Kit Fox Habitat Suitability Model, the applicant determined there is habitat with moderate to high suitability immediately adjacent to this part of the project (RCI 2023rr; Cypher et al. 2013). This species may forage and explore staging and parking areas on the western side of the overall project footprint (west of I-5), including around the PG&E utility switchyard (non-jurisdictional component) and the gen-tie line corridor (jurisdictional component). This is due to the species innate curiosity, foraging opportunities created by ground disturbance during construction, and potential food waste or other attractants left by workers. This species was not observed during the applicant's daytime surveys, however this species is primarily nocturnal and is not likely to be detected during the day.

For the PG&E downstream network upgrades, this species has a moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. This species has a low potential to occur in the Scenario 2 Fiber Line study area and a portion of the Cantua Substation study area. San Joaquin kit fox are not expected to den in any

of these areas due to the highly disturbed nature of these agricultural areas. There is suitable foraging habitat in the areas with chenopod scrub and grassland habitat as these areas contain suitable friable soils and likely prey species. This species is not expected to occur in the Los Banos, Midway, or Gates Substations study areas due to lack of suitable habitat.

Direct impacts to this species could include 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 due to soil compaction. Additionally, human-related subsidies—such as food waste, trash, and water sources—could inadvertently attract kit foxes to active construction areas, increasing the risk of vehicle strikes and predation. Indirect impacts could include disruption of movement due to increased traffic and human activity which could potentially alter foraging patterns and habitat use.

Direct and indirect impacts could potentially occur from construction of the three alternative fiber line scenarios or work at the Cantua Substation. However, construction activities are expected to be temporary, short-term, and would primarily occur during the daytime. Construction activities would include vehicle movement along established rights-of-way (ROWs). The implementation of the alternative fiber line scenarios and proposed work at Cantua Substation would take place within existing distribution structures, designated transmission routes, and the fenced, developed substation, minimizing additional ground disturbance.

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. As discussed above at the beginning of the “PG&E Utility Switchyard and Downstream Network Upgrades” subsection, construction of the PG&E switchyard and the construction activities for facilities and equipment installed as part of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would not be covered under the PG&E O&M HCP. If project activities may result in take under ESA or CESA, PG&E would need to coordinate with the USFWS and CDFW to obtain separate incidental take authorization, if required.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to avoid and minimize direct and indirect impacts to San Joaquin kit fox: Worker Environmental Awareness Training for all crew members that identifies project-specific practices being implemented to protect biological resources, Standard Construction Practices (standard construction practices to reduce the potential for environmental impacts, including limiting vehicle speeds to 15 miles per hour in ROWs or on unpaved roads and requirements for post-construction restoration and erosion control), Access (to restrict vehicle and equipment use to existing roads), Trash (collection and management), Refueling (to avoid natural habitat impacts), Wildlife Entrapment (to ensure pipes and culverts are inspected prior to moving), Wildlife Handling (no handling of wildlife or plants species or removal from activity areas), and

Invasive Species (to clean vehicles and equipment of noxious weeds/seeds). PG&E Construction Measure for Fugitive Dust Control (to limit speeds, apply water to disturbed areas and stockpiles, and other associated measures to control fugitive dust) is also recommended, included in **Section 5.1, Air Quality**, as **MM AQ-1**.

In addition, PG&E would implement species-specific measures for San Joaquin kit fox, that also address American badger and burrowing owl, see **MM BIO-13**. These measures would include pre-construction surveys within 500 feet of work areas (where accessible) conducted no less than 14 days and no more than 30 days before ground disturbing activities. Avoidance buffers would be established at the following distances: 50-feet around potential or atypical dens, 100-feet around known dens, and 500-feet around natal or pupping dens (unless otherwise specified by CDFW or USFWS). However, encroachment into these buffers should not take place as outlined in **MM-BIO-13** without consultation with USFWS and/or CDFW. Consultation should take place to consider alternative take avoidance measures and/or acquisition of take authorization. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. Staff modified **MM BIO-13** to ensure that a 500-foot buffer would be enforced around natal dens. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to San Joaquin kit fox from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-9**, **MM BIO-13**, **MM BIO-20** and **MM AQ-1** to reduce impacts to less than significant.

Western Red Bat

This species has a moderate potential to occur in the PG&E utility switchyard, which is currently occupied by an almond orchard. Western red bat are known to roost and/or forage in almond orchards, particularly in areas which lack riparian habitat. Western red bats typically rely on riparian woodlands for roosting and foraging but have increasingly adapted to roosting in orchards due to widespread habitat loss from agriculture and development (Pierson et al. 2006). In addition, the Cantua Creek is located approximately 0.66 miles from the PG&E utility switchyard which is within the known foraging distance for the species (Zeiner et al 1988-1990). Western red bats typically forage within a few miles of their roosting sites and may travel several miles to access water. Additionally, studies have shown that bats may often use edge habitats, hedgerows, and irrigation ditches in agricultural landscapes (Chung-MacCoubrey 1996). For the PG&E downstream network upgrades, this species has a low potential to forage over all three alternative fiber line study areas, as well as a portion of the Cantua Substation study area. In addition, roosting habitat is limited

along the three alternative fiber line study areas and four substation study areas. Direct impacts to western red bat, and other tree-roosting bat species, include loss of individuals, displacement, and loss of roosting or foraging habitat, if the species is present. Indirect impacts could include degradation of roosting or foraging habitat through dust and weed proliferation as well as noise and vibration from construction.

For the PG&E utility switchyard, direct impacts could occur, including loss of individuals or displacement, during removal of the 50-acre almond orchard, which provides potentially suitable habitat for this species. The loss of western red bats may occur if almond trees are removed during their critical roosting period (April–October), when they use tree foliage for day roosting. These solitary bats rely on broadleaf trees and shrubs and maternity colonies form in summer (BCI 2025). In addition, tree removal during the winter months (November–March) may disturb torpid western red bats, forcing them to expend critical energy reserves and reduce fitness (H. T. Harvey & Associates, and HDR, Inc 2021). The risk is highest during the peak torpor period from December to February. Western red bats may be more active in warmer winter periods in warmer parts of California, such as the San Joaquin Valley, but may still face risks from cold snaps, habitat disturbance, and food scarcity. Therefore, tree removal during the summer or peak torpor period, without conducting pre-construction surveys, may cause direct mortality or displace individuals, especially females with young, or hibernating individuals.

Direct impacts to western red bat through loss of individuals would be a significant impact without implementation of mitigation, as this species is designated as a California Species of Special Concern and is protected by CDFW. For the PG&E downstream network upgrades, direct impacts are unlikely as roosting habitat is limited and no tree removal is proposed. Indirect impacts could occur at the three alternative fiber line scenarios, as these areas provide suitable foraging habitat for the species. However, indirect impacts would not likely be significant due to the disturbed nature of the study areas and work would take place within existing transmission routes. Therefore, there would likely be no impact to this species from construction of this part of the project.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to western red bat: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species, and Fugitive Dust Control. These are described further under the “San Joaquin kit fox” subsection above. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. However, direct impacts to western red bat, from tree removal could still occur without mitigation, if present. To further reduce direct impacts on this species, staff has proposed **MM BIO-19** (Impact Avoidance and Minimization Measures for Bats), which includes specific measures to avoid and minimize harm to roosting special-status bats during tree removal in the almond orchard. In addition, staff recommends **MM BIO-20** which would ensure that

a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures and staff's additional proposed MM are recommended to address direct and indirect impacts to western red bat from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-9**, **MM BIO-19**, **MM BIO-20**, and **MM AQ-1** to reduce impacts to less than significant.

San Joaquin Coachwhip, California Glossy Snake, Coast Horned Lizard, and Blunt-nosed Leopard Lizard

The San Joaquin coachwhip, coast horned lizard, and blunt-nosed leopard lizard have a moderate potential to occur in the project area for the PG&E downstream network upgrades. California glossy snake has a high potential to occur in these areas. Of these species, only the blunt-nosed leopard lizard and San Joaquin coachwhip have a potential to occur at the PG&E utility switchyard project area. Since these reptiles share similar habitat preferences, preferring open, dry habitat such as grasslands, scrub, and taking refuge in small mammal burrows, these species are discussed together as the potential impacts to each species would be similar.

For the PG&E utility switchyard, there is suitable foraging and burrowing habitat adjacent to the site that could support blunt-nosed leopard lizard however the switchyard is lacking in shrubs and high quality foraging habitat. This habitat is located on the western edge of the property outside the footprint of the PG&E utility switchyard but within the 159 acres that would be temporarily impacted by construction. Therefore, while the PG&E utility switchyard project site is disturbed and marginal habitat, the species could be present at very low densities or intermittently. San Joaquin coachwhip could also occur in these grassland habitats to the west of the project site. The PG&E utility switchyard project site would be fully graded and improved as part of the project construction. This work would involve significant ground disturbance, which could impact local wildlife and habitat conditions in the area. For the PG&E downstream network upgrades, there is grassland and atriplex scrub vegetation communities in Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. This vegetation type provides potential habitat for the blunt-nosed leopard lizard, San Joaquin coachwhip, and coast horned lizard.

Direct impacts to these species 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. Indirect impacts could include introduction or spread of invasive plant species, habitat degradation from fugitive dust, or trash subsidies which attracts predators such as ravens, coyotes, or feral dogs to construction work areas.

For the PG&E utility switchyard and downstream network upgrades, direct impacts could include injury or death as a result of individuals being crushed or buried by project vehicles, equipment, or displaced soil. If present in the project site, direct and indirect impacts to blunt-nosed leopard lizard and San Joaquin coachwhip could occur. Indirect impacts could include introduction or spread of invasive plant species, habitat degradation from fugitive dust, or trash subsidies which attracts predators such as ravens, coyotes, or feral dogs to construction work areas. For the PG&E downstream network upgrades, direct impacts could occur from installation of temporary pull/splice sites and HLZs which would require minor ground disturbance in the form of drive and crush, but not grading. The applicant has committed to avoid the grassland and atriplex scrub vegetation communities in Scenario 1 Fiber Line study area and HLZs would be located outside of these habitats, as feasible (RCI 2024cc). Installation of Scenario 3 Fiber Line would use of trenchless technology for underground fiber line installation at crossings.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to San Joaquin coachwhip, glossy snake, horned lizard, and blunt-nosed leopard lizard: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, PG&E would implement species-specific measures for blunt nosed leopard lizard and coast horned lizard. For blunt-nosed leopard lizard, these measures would include measures include conducting protocol surveys within a year before work, identifying signs and burrows, determining occupancy, and implementing protections. These include exclusion fencing around work areas without signs or burrows, consulting USFWS and CDFW to prepare an avoidance plan, and restricting construction to the species' active period (April–November). If lizards are present, a qualified biologist must monitor construction. However, if required buffers are not possible to protect the species, consultation should take place to consider alternative take avoidance measures and/or acquisition of take authorization. Staff has struck out that fencing would be installed in areas where blunt nosed leopard lizard are detected as this would be considered "take".

Currently, as discussed above at the beginning of the "PG&E Utility Switchyard and Downstream Network Upgrades" section, these construction activities would not be covered under the PG&E O&M HCP. Therefore, PG&E does not have take authorization under the federal ESA or CESA for blunt nosed leopard lizard so full avoidance of take is necessary. If project activities may result in take under ESA or CESA, PG&E may need to coordinate with the USFWS and CDFW to obtain separate incidental take authorization, if required. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the

potential to impact sensitive biological resources. Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts San Joaquin coach whip, glossy snake, horned lizard, and blunt-nosed leopard lizard from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-9**, **MM BIO-12**, **MM BIO-20** and **MM-AQ-1** to reduce impacts to less than significant.

California Tiger Salamander

California tiger salamander requires vernal pools or other seasonal water sources for breeding and spends the majority of its time in subterranean burrows. This species is not likely to occur at the PG&E utility switchyard due to lack of suitable habitat including potential burrows or seasonal water sources. This species has a low potential to occur in the Scenario 1 Fidler Line and Scenario 3 Fiber Line study areas in grassland habitats. Project activities in these areas may have direct and indirect effects.

Direct impacts could include injury or death as a result of individuals being crushed or buried by project vehicles, equipment, or displaced soil. Indirect impacts could include introduction or spread of invasive plant species, habitat degradation from fugitive dust, or trash subsidies which attracts predators such as ravens, coyotes, or feral dogs to construction work areas. For the PG&E downstream network upgrades, direct impacts could occur from installation of temporary pull/splice sites and HLZs which would require minor ground disturbance in the form of drive and crush, but not grading. The applicant has committed to avoid the grassland and atriplex scrub vegetation communities in Scenario 1 Fiber Line study area and HLZs would be located outside of these habitats, as feasible (RCI 2024cc). Installation of Scenario 3 Fiber Line would use of trenchless technology for underground fiber line installation at crossings.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to California tiger salamander: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species, Herbicides, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above. In addition, implementation of the PG&E Construction Measure for Waterways (prevent cleared or pruned vegetation, woody debris (including chips), and loose or exposed soil, from entering waterways) could apply to this species. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to California tiger salamander from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-9**, **MM BIO-20** and **MM-AQ-1** to reduce impacts to less than significant.

Foraging Birds and Raptors

Many common and special status avian species may forage near the PG&E utility switchyard in the grassland habitats adjacent to the project site, such as red-tailed hawk, mountain plover and loggerhead shrike. In addition, birds may utilize the existing almond orchard for foraging including and western kingbird and barn swallow. For the PG&E downstream network upgrades there numerous common and special-status bird species that may nest in these project areas, due to the variety of habitats these facilities pass through, including atriplex scrub, chenopod scrub agricultural, annual grassland, tamarisk thickets. These species tricolored blackbird, short-eared owl, golden eagle, burrowing owl, ferruginous hawk, northern harrier, Oregon vesper sparrow, yellow warbler, Le Conte's thrasher, and yellow-headed blackbird, see **Table 5.2-1B** for a complete list of wildlife species with a potential to occur in the project area.

For the PG&E, utility switchyard, removal of the 50 acre almond orchard would result in loss of foraging habitat. The rest of the area is currently cleared and would not provide high quality foraging habitat. For the PG&E downstream network upgrades, direct impacts could occur from installation of temporary pull/splice sites, HLZs, and other construction activities. These impacts would be temporary and require limited ground disturbance at splice points and undergrounding locations for the Scenario 3 Fiber Line at the I-5 crossing. These construction activities would require minor ground disturbance in the form of drive and crush, but not grading. The applicant has committed to avoid the grassland and atriplex scrub vegetation communities in Scenario 1 Fiber Line study area and HLZs would be located outside of these habitats, as feasible (RCI 2024cc). Installation of Scenario 3 Fiber Line would use of trenchless technology for underground fiber line installation at crossings.

Direct impacts would include loss of foraging habitat at the PG&E utility switchyard and may include the temporary displacement of foraging birds due to noise, human presence, and habitat disturbance from construction activities. Indirect impacts could result from reduced prey availability, changes in vegetation composition, and soil degradation, which may alter food resources and habitat structure. These impacts to foraging habitat for the PG&E downstream network upgrades would be temporary and ground disturbance would be minimal.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to foraging birds and raptors: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species,

Herbicide, and Fugitive Dust Control. These are described further under the “San Joaquin kit fox” subsection above. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

For the jurisdictional components of the project, staff proposes COC **BIO-9** (Swainson’s Hawk Foraging Habitat Revegetation and Management Plan) which requires revegetation and maintenance of the jurisdictional site to promote Swainson’s hawk and burrowing owl habitat. That COC would also enhance foraging habitat for other special-status and common bird species. Revegetation would occur within the undeveloped areas of the 9,100-acre site, including under the PV panels, and would include plantings of grasses and forbs, and also include trees. Implementation of these measures would reduce the impacts from foraging habitat from the removal of the almond orchard.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to foraging birds and raptors from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of COC **BIO-9**, **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-10**, **MM BIO-20**, and **MM-AQ-1** to reduce impacts to less than significant.

Nesting Birds and Raptors

Many common and special status avian species may nest near the PG&E utility switchyard in the grassland habitats adjacent to the project site, such as mountain plover. In addition, birds may utilize the existing almond orchard for nesting including western kingbird. For the PG&E downstream network upgrades there are numerous common and special-status bird species that may nest in these project areas, due to the variety of habitats these facilities pass through, including atriplex scrub, agricultural, annual grassland, and tamarisk thickets. These species include burrowing owl, Swainson’s hawk, northern harrier, California horned lark, see **Table 5.2-1B** for a complete list of wildlife species with a potential to nest in the project area.

For the PG&E, utility switchyard, removal of the 50-acre almond orchard would result in loss of nesting habitat. The rest of the area is cleared and graded and would not provide high quality nesting habitat however birds may nest in grassland areas adjacent to the site. For the PG&E downstream network upgrades, direct impacts could occur from installation of temporary pull/splice sites, HLZs, and other construction activities. These impacts would be temporary and require limited ground disturbance at splice points and undergrounding locations for the Scenario 3 Fiber Line at the I-5 crossing. These construction activities would require minor ground disturbance in the form of drive and crush, but not grading. The applicant has committed to avoid the grassland and atriplex scrub vegetation communities in

Scenario 1 Fiber Line study area and HLZs would be located outside of these habitats, as feasible (RCI 2024cc). Installation of Scenario 3 Fiber Line would use of trenchless technology for underground fiber line installation at crossings.

Direct impacts would include loss of nesting habitat at the PG&E utility switchyard and may include loss of nests as well as the temporary displacement of nesting birds due to noise, human presence, and habitat disturbance from construction activities. Indirect impacts could result from changes in vegetation composition, and soil degradation, which may alter habitat structure. These impacts to nesting habitat for the PG&E downstream network upgrades would be temporary and ground disturbance would be minimal.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to nesting birds and raptors: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species, Herbicide, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above. In addition, the PG&E Construction Measures for nesting birds and raptors include pre-construction nesting bird surveys and monitoring of active nests by a qualified biologist, implementation of species-appropriate avoidance buffers and continuous monitoring by a qualified biologist. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts.

In addition, for the jurisdictional project components, staff proposes COC **BIO-9** (Swainson's Hawk Foraging Habitat Revegetation and Management Plan) which requires revegetation and maintenance of site to promote Swainson's hawk and burrowing owl habitat. That COC would also enhance nesting habitat for other special-status and common bird species. Revegetation would occur within the undeveloped areas of the 9,100-acre site, including under the PV panels, and would include plantings of grasses and forbs, and also include trees. Implementation of these measures would reduce the impacts to nesting habitat from the removal of the almond orchard. Staff has proposed modifications to **MM BIO-17** and recommends a follow up survey for nesting birds take place prior to the start of construction. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to nesting birds and raptors from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of COC **BIO-9**, **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-9**, **MM BIO-17**, **MM-BIO-18**, **MM BIO-20**, and **MM-AQ-1** to reduce impacts to less than significant.

Burrowing Owl

The burrowing owl inhabits open grasslands, deserts, and agricultural fields with low vegetation and relies on existing burrows, primarily those created by ground squirrels, for shelter and nesting. This species is unlikely to occur at the PG&E utility switchyard due to the absence of suitable habitat, including burrows and open foraging areas. While CEC staff observed ground squirrels, but not burrows, within the almond orchard during the October 2024 site visit, this species is not likely to occupy this site. Burrowing owls require open habitat with low vegetation, so are unlikely to persist in agricultural lands dominated by vineyards and orchards (CDFW 2012). For the PG&E downstream network upgrades burrowing owls have a high potential to nest and forage in the study areas for the Scenario 1 Fiber Line, Scenario 2, and Scenario 3 fiber lines and the Cantua Substation, where grassland habitats may provide foraging opportunities and nesting sites.

Direct impacts to burrowing owls in or adjacent to proposed disturbance areas during construction activities may include injury or mortality of individuals. This could occur from collisions with vehicles or equipment, destruction of occupied burrows and/or active nest sites. In addition, disturbance from construction noise/vibration and increased human presence that could result in an interruption of normal behaviors or nest abandonment. Additionally, trash subsidies could attract predators such as coyotes or feral dogs to construction work areas. Indirect impacts could include loss or degradation of foraging habitat due to soil compaction as well as disruption of movement due to increased traffic and human activity.

As discussed above at the beginning of the "PG&E Utility Switchyard and Downstream Network Upgrades" subsection, the construction activities for facilities and equipment installed as part of the selected alternative fiber line scenario and the upgrades at existing PG&E substations would not be covered under the PG&E O&M HCP. At the time the O&M HCP was approved, the burrowing owl was not a candidate species for listing, and it was covered under the HCP as a species of special concern. The O&M HCP would need to be updated to include burrowing owl under CESA. If project activities may result in take under CESA, PG&E may need to coordinate with the CDFW to obtain separate incidental take authorization, if required.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to burrowing owl: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species, Herbicide, and Fugitive Dust Control. These are described further under the "San Joaquin Kit Fox" subsection above. In addition, implementation of the PG&E Construction Measure require pre-construction surveys for burrowing owl within 500 feet of work areas (where accessible) no less than 14 days and no more than 30 days prior to ground disturbing activities. If detected, these measures require implementation of avoidance buffers. In addition, the PG&E Construction Measures for burrowing owl include

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). However, since burrowing owl is currently a candidate species for listing these measures are not recommended by staff as they would constitute take under CESA. If impacts cannot be avoided, PG&E should consult with CDFW to determine if incidental take permit would be required. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to burrowing owl from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-9**, **MM-BIO-13**, **MM BIO-20**, and **MM-AQ-1** to reduce impacts to less than significant.

Swainson's Hawk

Swainson's hawk has no potential to nest within the PG&E utility switchyard but has a moderate potential to nest in riparian trees along Cantua Creek, located approximately ½ mile south. This species is not expected to nest or forage at the PG&E utility switchyard project site, but could forage in suitable grassland habitats adjacent to the site (RCI 2023rr). For the PG&E downstream network upgrades, this species has a moderate potential to nest near the Cantua Substation study area and in Los Gatos Creek within the Scenario 2 Fiber Line and Scenario 3 Fiber Line study areas. This species has a low potential to nest in Cantua Creek within the Scenario 2 Fiber Line study area. This species has the potential to forage in agricultural fields along the Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line study areas, as well as the Cantua Substation study area.

If Swainson's hawk are nesting within 0.25 mile of disturbance areas, direct impacts to the species could include 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 resulting from vegetation clearing or ground disturbance, or soil compaction that may impede burrow creation by Swainson's hawk prey species, may also occur. 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. This would entail work on existing permanent infrastructure or involve temporary disturbance that would be restored following construction.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to nesting birds and raptors: Worker Environmental Awareness Training, Standard Construction Practices,

Access, Trash, Refueling, Invasive Species, Herbicide, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above. In addition, the PG&E Construction Measures for Swainson's hawk include pre-construction surveys for Swainson's hawk within 0.5 mile of ground-disturbing activities outside existing maintenance roads are required if construction occurs during the Swainson's hawk nesting season (March–June). Consultation with CDFW would be needed to determine if known active Swainson's hawk nests or traditional territories are within 0.5 mile of work areas, and a nesting construction plan must be prepared with CDFW to determine monitoring needs and avoidance setbacks.

Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to nesting birds and raptors from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-5**, **MM BIO-9**, **MM BIO-14**, **MM BIO-20**, and **MM-AQ-1** to reduce impacts to less than significant.

American Badger

American badgers have a low potential to occur at the PG&E utility switchyard due to lack of suitable habitat for prey species and their burrows, in part due to the presence of an almond orchard. For the PG&E downstream network upgrades, this species has a high potential to occur in agricultural areas with friable soils, including along field edges and road, within the Scenario 1 Fiber Line, Scenario 2 Fiber Line, and Scenario 3 Fiber Line study areas, as well as the Cantua Substation study area.

Direct impacts to this species could include 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. Indirect impacts could also include degradation of habitat due to spread of invasive plants, fugitive dust, erosion, sedimentation, and runoff of hazardous materials, and trash subsidies.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to American badger: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Handling, Invasive Species, Herbicide, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above. In addition, the PG&E Construction Measures for American badger would include pre-construction surveys within 500 feet of work areas (where accessible) conducted no less than 14 days and no more than 30 days before ground-

disturbing activities. Additionally, avoidance buffers would be established, including a 50-foot buffer around potential or atypical dens, a 100-foot buffer around known dens, and a 500-foot buffer around natal or pupping dens, unless otherwise specified by CDFW. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to San Joaquin kit fox from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1** to **MM BIO-5**, **MM BIO-7** to **MM BIO-9**, **MM BIO-13**, **MM BIO-20**, and **MM AQ-1** to reduce impacts to less than significant.

Tulare Grasshopper Mouse, Short-Nosed Kangaroo Rat, Giant Kangaroo Rat, Nelson's Antelope Squirrel

Tulare grasshopper mouse, short-nosed kangaroo rat, giant kangaroo rat, Nelson's antelope squirrel are all species found in arid grasslands and scrublands of the San Joaquin Valley. These species are not likely to occur at the PG&E utility switchyard due to lack of suitable habitat. For the PG&E downstream network upgrades, these have a low to moderate potential to occur in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas.

Direct impacts may include injury or death resulting from vehicle collision, damage or destruction of occupied burrows, disturbance from construction noise/vibration, and loss or degradation of foraging habitat. Human-caused food subsidies may attract mice to disturbance areas during construction. Indirect impacts could also include degradation of habitat due to spread of invasive plants, fugitive dust, erosion, sedimentation, and runoff of hazardous materials.

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts to Tulare grasshopper mouse, short-nosed kangaroo rat, giant kangaroo rat, Nelson's antelope squirrel: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Wildlife Entrapment, Wildlife Sighting, Invasive Species, Herbicide, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above.

In addition, the PG&E Construction Measures for Tulare grasshopper mouse and San Joaquin antelope squirrel (=Nelson's antelope squirrel) 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 these species are present, or active nesting/burrowing sites of the species are present, PG&E would

need to prepare a plan to address potential impacts to be approved by the CDFW. For San Joaquin antelope squirrel, a minimum 50-foot no disturbance buffer is required, or consultation with CDFW to consider alternative take avoidance measures and/or acquisition of take authorization. If Tulare grasshopper mouse are present, it would require installation of a 50-foot no disturbance buffer around burrows. For giant kangaroo rats and San Joaquin antelope squirrel burrows, the PG&E Construction Measures would also include pre-construction surveys, establishment of 50-foot no disturbance buffer, or consultation with CDFW to consider alternative take avoidance measures and/or acquisition of take authorization. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. While there are no species-specific measures for short-nosed kangaroo rat, implementation of standard PG&E Construction Measures would reduce impacts to this species. In addition, staff recommends **MM BIO-20** which would ensure that a biological monitor would be present onsite during all ground-disturbing activities or other activities with the potential to impact sensitive biological resources.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to Tulare grasshopper mouse, short-nosed kangaroo rat, giant kangaroo rat, Nelson's antelope squirrel from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1 to MM BIO-5, MM BIO-7 to MM BIO-10, MM BIO-15, MM BIO-16, MM BIO-20, and MM AQ-1** to reduce impacts to less than significant.

Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, project operation would affect special-status species and habitat and can be mitigated to below the level of significance with the incorporation of Conditions of Certification (COC) **BIO-1 to BIO-17, AQ-SC6, AQ-7, AQ-8, AQ-11, AQ-14, VIS-2, NOISE-4, WATER-2, and WORKER SAFETY-2**, and Mitigation Measures (MM) **MM WATER-1 to MM WATER-2**

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Common and Special Status Wildlife, Nesting Birds and Raptors

Operational activities may occasionally disrupt habitat function and values for both common and special-status wildlife species. These activities include ongoing human disturbance, lighting and glare, noise, the spread of invasive plants and noxious weeds, ongoing vegetation and weed management activities (such as mowing, sheep grazing, chemical or mechanical controls), infrequent mirror washing and maintenance of PV panels and appurtenant infrastructure, dust control and road maintenance, and other operational activities. These are fully described in the applicant's Updated Project Description and other filings included as part of the opt-in application (IP 2024o). Operational impacts to common species and special-status species such as

American badger and San Joaquin kit fox include risk of mortality by vehicle strikes on access roads by maintenance personnel.

The perimeter fencing is designed as a “wildlife friendly option” with a four to six inch gap at the bottom, to allow wildlife to pass through and prevent complete restriction of movement (RCI 2023c). As discussed above, under the “Common and Special-Status Nesting Birds, Including Tricolored Blackbird” subsection, the placement of perimeter fencing may degrade existing habitat value for some wildlife by providing roosting opportunities for some disturbance tolerant birds such as ravens which can result increased predation risk in adjacent lands. These potential impacts would be considered significant if the impact occurred and if the species were to occur on the project site and therefore require mitigation.

To avoid and minimize impacts, both direct and indirect, from operation on common wildlife and nesting birds, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the “Foraging Birds and Common Wildlife” subsection above. These proposed measures would require the project owner to employ a designated biologist and, if necessary, a biological monitor. They also require the implementation of minimization measures and best management practices to reduce wildlife mortality, and control fugitive dust. In addition, **BIO-8** (Preconstruction Nest Surveys, Impact Avoidance and Minimization Measures (Including Tricolored Blackbird), which would also apply during operation, as needed.

Staff proposes COC **BIO-9**, which would require a Swainson’s Hawk Conservation Strategy and Foraging Habitat Management Plan, and COC **BIO-11**, (Swainson’s Hawk Conservation Easement and Revegetation Security), which would establish a Security amount, required prior to start of construction, to ensure that funding adequate is available to support the success of COC **BIO-9**. Additionally, staff proposes the following COCs to reduce impacts to special-status species during operation, as needed: **BIO-10** (Swainson’s Hawk Impact Avoidance, Minimization, and Mitigation Measures for Take); **BIO-12** (Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures), **BIO-14** (American Badger Avoidance and Minimization Measures), **BIO-15** (San Joaquin Kit Fox Avoidance and Minimization Measures); and **BIO-16** (Crotch’s Bumble Bee Avoidance and Minimization Measures).

If incidental take of Swainson’s hawk and/or burrowing owl were to occur during operation it would be covered under COCs **BIO-10** and **BIO-12**.

With implementation of staff’s proposed COCs **BIO-1** to **BIO-7**, **BIO-9**, **BIO-10** to **BIO-12** and **BIO-14** to **BIO-16**, impacts to common and special-status wildlife species, including nesting birds, Swainson’s hawk and burrowing owl, during operation would be reduced to less than significant.

Nitrogen Deposition

Nitrogen deposition is the input of nitrogen oxide (NO_x) and ammonia (NH₃) “atmospherically derived pollutants” (ADP) primarily nitric acid (HNO₃), from the atmosphere to the biosphere. Nitrogen deposition sources are primarily vehicle, agriculture, and industrial emissions (including power plants). Vehicles are considered a “non-point” source because they are mobile.

Mechanisms by which nitrogen deposition can lead to impacts on sensitive species and vegetation communities include changes in species composition among native plants and the enhancement of invasive species such as grasses (Fenn et al. 2003 and Weiss 2006). The increased dominance and growth of invasive annual non-native species is especially prevalent in low biomass vegetation communities that are naturally nitrogen-limited (in certain soils such as serpentine soils). Nitrogen deposition artificially fertilizes the soil and creates better conditions for non-native species to persist and to ultimately displace native species, resulting in type conversion (conversion of one habitat type to another). Increased nitrogen deposition in nitrogen poor soils has allowed for the proliferation of non-native species that can crowd out native species.

One approach for quantifying nitrogen deposition is through “critical load” which is defined as the input of a pollutant below which no detrimental ecological effects have been documented to occur over long-term studies. Staff and applicant both use Pardo et al (2011) to define critical load. Staff identified the following habitat types (vegetation communities) which may be susceptible to nitrogen deposition within 6 miles of the project site:

- Non-native grassland within the Ciervo Hills, west of the PG&E utility switchyard;
- Monvero Dunes, an isolated dune habitat within the Ciervo Hills, which is located approximately 5.5 miles northwest of the PG&E utility switchyard parcel;
- Cantua Creek and associated riparian corridor flows from within the Ciervo Hills to the California Aqueduct which runs roughly parallel to and approximately 200 feet south of the gen-tie line corridor at its nearest point; and
- Freshwater emergent wetland habitat within the Fresno Slough, located approximately 1.1 miles northeast of the solar facility footprint.

Based on the defined critical loads, the modeled maximum and average levels of nitrogen deposition from the project, which included in these particular vegetation communities were demonstrated to be well below levels that would significantly affect vegetation communities in the vicinity of the project site (RCI 2024u). The project applicant conducted nitrogen deposition modeling for the project, which included both Liquefied Petroleum Gas (LPG) and diesel emergency backup generators and fire pump engines, as described in the opt-in application submitted in November 2023. This is detailed in Data Request Response DR BIO-20 and included as Appendix F of Data Request Response Set 4 (RCI 2024u).

Modeling was accomplished using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) to assess nitrogen. The AERMOD regulatory non-default options for total, wet and dry deposition algorithms were implemented into the model. Staff and the applicant both used a 6-mile radius of influence from the source (project site) to assess potential adverse impacts of nitrogen deposition on native habitat. It has been the CEC staff's experience that, by the time the plume from a conventional power plant has traveled this distance, in-plume concentrations become indistinguishable from background concentrations. In December 2024, subsequent to this analysis by the applicant, project description details were changed, and the project was updated to remove the green hydrogen facility, which included removal of all of the emergency backup diesel generators (IP 2024o). The project added a third 150-kilowatt LPG generator, making a total of three LPG generators. The AERMOD regulatory non-default options for total, wet and dry deposition algorithms were implemented into the model. Both staff and the applicant assessed the potential adverse impacts of nitrogen deposition on nitrogen sensitive vegetation communities within a 6-mile radius of the project site, which represents the area influenced by the dispersion of the emissions plume.

The change from a combination of emergency backup diesel and LPG generators to exclusively LPG generators would reduce nitrogen oxide (NOx) emissions by approximately 83 percent, leading to a similar reduction in ADN. As a result, nitrogen deposition levels would be considerably less than those analyzed in nitrogen deposition modeling previously provided and impacts would continue to remain below critical thresholds associated with significant impacts to non-native grassland, dune or riparian vegetation communities in the vicinity of the project site or special-status species that may occur within the vegetation communities.

Operation of the project's emergency LPG backup generators would result in less than significant impacts to natural vegetation communities and special-status species within 6 miles of equipment operation. In addition, Air Quality staff have proposed COCs **AQ-SC6, AQ-7, AQ-8, AQ-11, AQ-14**, to monitor and limit nitrogen dioxides, see **Section 5.1, Air Quality** for further discussion.

Collisions, Night Light Lighting, and Attraction of Migratory Birds and Insects

Artificial night lighting from the project during operation could disturb resting, foraging, or mating activities of wildlife and make wildlife more visible to predators. Additionally, night lighting can attract birds, bats, and insects, to areas where they may collide with tall structures such as up to two microwave towers within the step-up substation, which are up to 200-feet tall. However, there are existing transmission lines in the vicinity with which these fiber lines would share transmission line corridors.

Lighting at the proposed solar facility, step-up substation, and other jurisdictional components would be restricted to areas required for safety, security, and operation

activities. Security lights would use motion sensor technology that would be triggered by movement at human height, to prevent activation by smaller wildlife. The level and intensity of lighting during operation would be kept to the minimum needed. Portable lighting may be used occasionally for maintenance activities during operations, such as emergency work that must occur at night.

As discussed in **Section 5.15, Visual Resources** of this staff assessment, the project is not anticipated to install any new structure lighting along gen-tie line, with the exception of any required aviation lighting and/or marking for some structures. Aviation lights would direct light upward and outward without illuminating nearby areas directly below the lights and no visible reflected light would be visible from the ground surface. While visible to motorists on local roads, I-5, and rural residences, the lighting would be consistent with existing aviation lights in the area. Upon completion of final design, the applicant would file with the Federal Aviation Administration (FAA), if necessary, for official study and determination of lighting and/or marking requirements for these structures. See **Section 5.15, Visual Resources** for a further discussion.

Aviation lighting is well-documented to adversely impact migratory birds, as noted that wildlife biologists have conducted extensive research to better understand how migratory birds are negatively affected by obstruction lights, which are used at night to warn pilots that they are approaching an obstruction hazard. Studies have documented that migratory birds appear to be attracted to the steady-burning (i.e., non-flashing) obstruction lights on communication towers and, as a result, thousands of birds are killed annually through collisions with these obstructions (Patterson 2012).

Certain types of lighting may attract insects which in turn may attract birds and bats to forage in the project area. As provided by the applicant in response to Data Request DR BIO-29, the applicant states that project lighting for operations would be restricted to areas required for safety, security, and operational activities, such as the operations and maintenance (O&M) facilities, step-up substation, BESS, and entrance gates, and green hydrogen facility (which is no longer part of the project) and would be less than 1% of the total project area (RCI 2024u). They state further that the level and intensity of lighting during operations would be the minimum needed and all lighting would be shielded and directed downward (full cut-off) to minimize the potential for glare or spillover into adjacent areas. Per the applicant's response, they expect that the project would "not significantly impact avian or invertebrate species as a result of artificial lighting, particularly in the context of the few species expected to occur at the site, including Swainson's hawk and burrowing owl" (RCI 2024u). The applicant's proposed design measures would allow areas surrounding the project to remain un-illuminated (dark) most of the time, thereby minimizing the amount of lighting potentially visible off site and minimizing the potential for lighting impacts to proximate wildlife. Staff reviewed the applicant's design measures and incorporated these, as appropriate, into staff's proposed COC **VIS-2** and **BIO-7** (General

Conservation Measures) to reduce impacts, see **Section 5.15, Visual Resources** for further information.

Mortality at solar PV facilities is not well understood, varies geographically, and may be caused by multiple factors such as artificial lighting, light polarization or other anthropogenic causes such as the "lake effect". Polarized light pollution occurs from light reflecting off of dark colored human-made structures, and been demonstrated to be generated from even low-reflectance PV panels (Horvath et al. 2009). In addition, migrating birds, especially during storms, may fly lower than usual, putting them at greater risk of colliding with towers or other structures at solar facilities (USFWS 2025a). The "lake effect" is where birds mistake reflective solar panels for water, with migratory birds particularly at risk. However, PV systems typically no longer use reflective panels and have transitioned to non-reflective coatings to enhance efficiency. The proposed project would have PV panels that are minimally reflective, dark in color, and highly absorptive. The solar PV panels would be designed to absorb as much light as possible to maximize the efficiency of energy production and would be treated with an anti-reflective coating which would further reduce the reflectivity of the panels (TN 252976).

The applicant cited, among others, work by Diehl, Roberson, and Kosciuch (with funding from the California Energy Commission) as detailed in Data Request Response Set 4, in coming to the conclusion that the project "is not anticipated to result in direct or indirect avian morbidity or mortality above baseline conditions" (RCI 2024u). Staff finds the applicant's assessment is misleading based on staff's review of the published study. This referenced study is now published under Diehl, et al (2021), which, while it ultimately concluded that however "it is unknown how other landscape contexts outside of this study region and the availability of natural water bodies will influence aquatic habitat bird behavior at PV USSE facilities.", but that "The results from this study suggest that some species of aquatic habitat birds could be attracted to PV USSE facilities, and if attraction occurs, it is likely context-dependent" (Diehl, et. al 2021). For reference, "USSE" refers to utility-scale solar energy. Staff is unaware of any robust scientific studies of avian mortality in the San Joaquin Valley or Fresno County, in particular. In addition, scaling up from small scale PV sites to large scale PV project, such as the proposed project, presents challenges. In addition, staff considers that risk of attraction, collision, and/or "take" at the site may be infrequently compounded by the presence of 16 onsite stormwater control detention basins. The basins would be scattered across the site and may infrequently have standing water during heavy rain-fall events interspersed among the PV panels, these basins are discussed further below under the "Stormwater Control (Detention Basins)" subsection.

The project would be the largest solar project in Fresno County, covering approximately 9,500 acres with a planned 1,150 MW solar capacity and up to 4,600 MWh of battery storage. The project would be among the largest solar installations in the United States. Currently, Copper Mountain Solar Facility in Nevada and the

Edwards Sanborn Solar and Storage Project in Kern County, California are among the largest in total land area, both at approximately 4,000 acres each. While avian mortality monitoring is conducted at some solar facilities, limited data exist for projects of this magnitude. Informal monitoring would provide valuable information to assess potential risks and guide future mitigation strategies. Early detection of avian mortality trends could allow for adaptive management strategies, such as deterrents. Informal monitoring would allow for early detection and data collection, which can be used to inform best practices and mitigate risks before they become significant issues.

Condition of Certification **BIO-17**, Avian Solar Conservation Plan, which was developed in part based on coordination with the USFWS Migratory Bird Permit office representatives (CEC 2025c), requires the project owner to implement avian and bat mortality monitoring at the project site. Monitoring would include survey coverage of features that have been demonstrated or are suspected to play a role in collision-related injuries or mortalities (i.e. the gen-tie line, perimeter fencing, solar arrays), or otherwise serve as potential attractants to the site (e.g. standing water in detention basins and the stormwater retention pond). This measure requires two years of informal avian and bat injury and mortality monitoring (the Informal Monitoring Plan), with triggers to implement a formal two-year study based on the current USFWS-recommended protocol (Huso et al. 2016).

Staff proposed triggers for a formal two-year Formal Monitoring Study. The triggers were based upon staff's independent research. The triggers for development and implementation of an Avian and Bat Monitoring Plan (Formal Monitoring Study) would include the following:

- >25 native or migratory, non-special status birds in one survey session; or
- >3 special-status birds (including raptors) in one survey session (excluding Swainson's hawks and burrowing owl); or
- >50 native or migratory, non-special status birds in one spring or fall migratory season; or
- Over a two year survey period, one special-status bat or more than 5 common bats are detected over three separate survey sessions (not necessarily consecutive)

Staff developed the proposed thresholds to address the following potential concerns:

- High Mortality in a Single Survey: If more than 25 native or migratory, non-special status birds are found in one survey session, it may indicate an acute risk requiring further study.
- Special-Status Bird Fatalities: If more than 3 special-status birds (including raptors, but excluding Swainson's hawks and burrowing owls) are found in one survey session, this could suggest a significant impact on protected species.

- **Seasonal Migratory Bird Mortality:** If more than 50 native or migratory, non-special status birds are found during a spring or fall migration season, this could indicate a pattern of increased risk during migration.
- **Bat Fatalities Over Time:** If, over a two-year period, at least 1 special-status bat or more than 5 common bats are found across three survey sessions, this would suggest a need for further investigation into bat interactions with the project features.

To avoid and minimize impacts, staff proposes implementation of COC Condition of Certification **BIO-7**, which would direct the project owner to install aviation lighting which is wildlife friendly, if feasible, while still meeting FAA regulations, along with **VIS-2**. Staff expects that migratory bird collisions may still occur at the project site, and may be the result of a combination of factors, including polarized light reflections from solar panels, weather conditions such as fog or strong winds, bird species behavior and flight patterns, the proximity of the facility to migratory corridors or stopover habitats and the presence of nearby water bodies or food sources that draw birds into the area (USFWS 2025a). See the "Wildlife Corridors, Special Linkages, and Important Bird Areas" subsection for further discussion of the Pacific Flyway and IBAs in relation to the project site. These potential impacts to migratory birds and bats would be considered significant if operation of the project were to violate the MBTA, federal ESA and/or CESA, significantly disrupt migratory behavior, and/or lead to high mortality rates, and therefore require mitigation. Therefore, staff proposes COC **BIO-17** (Avian Solar Conservation Plan), which would require the project owner to conduct an informal monitoring study and adaptive management of the project site after construction. If triggers are met for mortality of more than a certain number of birds or bats, based on specific criteria, then a formal monitoring study shall be implemented.

This measure would also require the applicant to apply for "Special Purpose Utility" (SPUT) permit issued by the USFWS that allows solar energy companies to collect, transport, and temporarily possess migratory birds found dead on their solar facility property, as part of the avian protection plan that would be implemented to minimize bird fatalities at the project site (USFWS 2025b). Staff's proposed COC (**BIO-17**) requires the applicant to obtain a SPUT permit from the USFWS prior to the start of operation and maintain the permit until no longer recommended by the USFWS.

Staff recommends that the project owner conduct mortality monitoring of the project site to assess operational impacts and develop adaptive management strategies if significant effects on migratory birds and/or bats are identified during project operation as part of COC (**BIO-17**), Avian Solar Conservation Plan. With implementation of staff's proposed COCs **VIS-2** and **BIO-7** and **BIO-17**, impacts to migratory birds would be reduced to less than significant.

Stormwater Control (Detention Basins)

The proposed project would add approximately 291 acres of impervious surfaces, that could result in increases in stormwater runoff and erosion on site (RCI 2023oo). However, the project would reduce overall stormwater runoff leaving the site by incorporating runoff control features and detention basins strategically placed throughout the project site (RCI 2023oo).

The project does not include the use of an existing stormwater drainage system within the site, but instead, the design includes detention basins placed throughout the project site to control the rate and amount of stormwater runoff associated with each drainage area (RCI 2023ff). The applicant provided detailed layout maps for the proposed detention basins in the 2023 Preliminary Drainage Report (IP Darden I, LLC 2023) and provided detailed description in Section 5-13 of the opt-in application (RCI 2023oo), and Figure 4 provided in response to data requests (RCI 2024u). There would be 16 drainage areas with the detention basins located in the northeast portion of each drainage area. These detention basins would provide more storage capacity than necessary for balanced conditions for a 100-year storm event (RCI 2024u). The applicant has stated that the final detention basin sizing, including the size and depth, and locations are not available (TN 261491)

Water Resources staff recommends COC **WATER-2**, to minimize or avoid stormwater flows leaving the project site and to minimize erosion or sedimentation that could affect water quality. Staff's proposed COC **WATER-2** requires the project owner to provide best management practices (BMPs) and materials management practices at the site and provide final design of the 16 detention basins. See **Section 5.16, Water Resources** for further information.

The applicant modeled both 100-year/24-hour and 500-year/24-hour storms, but the results do not include data on how long it would take the water to dissipate (TN 261491). The detention basins would be designed to drain the 100-year stormwater within 48 hours. Smaller storm events would drain "more quickly" (TN 261491). The frequency with which the 16 detention basins may contain water is unclear. However, staff assumes that, in an average year, they may not fill with water, or only some may fill with water, but would generally drain quickly, and typically within 48 hours or less.

The detention basins would be scattered across the project site. Water impounded in the detention basins may adversely affect and temporarily impact vegetation and wildlife particularly small fossorial animals (e.g., burrowing species) or species with limited dispersal abilities. These species could be periodically displaced or lost during large storm events. Ground nesting birds could potentially be affected by storm events. Wildlife, such as small mammals, waterfowl, shorebirds, and other resident or migratory birds, may be attracted to areas supporting large areas of standing water. However, the project site is located where Cantua Creek, an ephemeral drainage from the surrounding mountains, terminates. Given the availability of alternative water sources, such as stock ponds, irrigation ditches, and other man-made water

conveyances the risk of attracting wildlife is considered low. However, the impact from the stormwater detention basins on wildlife is unknown and monitoring should be conducted to evaluate the extent and significance of any impacts.

Staff, in coordination with representative of the USFWS Migratory Bird Permit Office, recommend that the project owner conduct mortality monitoring at the site to assess the operational impacts and develop adaptive management strategies if significant project effects upon migratory birds and/or bats are demonstrated during project operations (CEC 2025c). Staff has proposed COC **BIO-17** (Avian Solar Conservation Plan), which would include development of an Avian Solar Conservation Plan and require the project owner to conduct monitoring and adaptive management of the project site after construction. This plan would also include monitoring of the detention ponds during spring and fall migratory seasons, in addition to year-round monitoring for a minimum of 2 years. With implementation of COC **BIO-17**, impacts to migratory birds and/or bats and other wildlife from stormwater control would be reduced to less than significant.

Noise and Vibration

Operational noise can adversely affect wildlife through disruption of normal behavioral activities. Operational activities of the constructed project would not generate high noise levels. Sources of operational noise will include general operation of the facility such as transformers, energy storage systems and substation equipment (Section 5.3, Noise, RCI 2023u), which will be strewn across a large project site, which most mobile animals can avoid at will. To reduce noise-related impacts to human receptors, staff proposes **NOISE-4** (Operational Noise Restrictions), which would have some benefit to wildlife. Staff further proposes **BIO-10**, Swainson's Hawk Impact Avoidance Minimization and Mitigation Measures for Take to set buffers and monitor noise-related effects on nesting Swainson's hawk, **BIO-16**, Crotch's Bumble Bee Avoidance and Minimization Measures, and **BIO-12**, Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures, to set buffers and monitor noise-related effects on nesting burrowing owl, and **BIO-15**, San Joaquin Kit Fox Avoidance and Minimization Measures, to monitor noise effects on San Joaquin kit fox to reduce impacts to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

PG&E Utility Switchyard

The PG&E utility switchyard is not currently covered under the PG&E O&M HCP for the San Joaquin Valley. PG&E may seek to include the facility under the HCP through a regulatory process that includes habitat assessments, biological surveys, and approval from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). If approved, PG&E would implement mitigation measures, such as habitat restoration or conservation actions, and continue monitoring compliance as part of its annual obligations to ensure environmental protection.

Due to lack of suitable habitat, no special status plants are expected to occur at the PG&E utility switchyard during operation. Nesting birds and raptors have a low potential to occur at the PG&E utility switchyard, however some species may use existing structures for nesting. The gen-tie line (jurisdictional component) transmission facilities would be designed consistent with the APLIC 2006 guidelines and would be evaluated for potential collision reduction devices in accordance with APLIC 2012 guidelines. These guidelines are industry best practices for minimizing avian electrocution and collision risks associated with power lines. Special-status species such as Swainson's hawk and other raptors and birds would continue to utilize nearby areas for foraging and nesting. San Joaquin kit fox, a federally listed species, could also traverse the PG&E utility switchyard site. Individuals may enter fenced areas of site during operation but would need to dig under fences to access the site. In addition, blunt nosed leopard lizard may occur in grassland habitats adjacent to the switchyard. See **Table 5.2-1B** for a complete list of wildlife species with a potential to occur in the project area.

If the facility is added to the PG&E HCP, required avoidance and minimization measures (AMMs) would be implemented to reduce any potential impacts on these species during O&M activities. However, operation of the PG&E utility switchyard would likely 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 O&M HCP and its Implementing Agreement, and permits issued by USFWS and CDFW, under the federal ESA and CESA. Implementation of these measures would reduce impacts to wildlife at the PG&E switchyard during operation to less than significant.

Downstream Network Upgrades

The fiber line scenario selected by PG&E and the substation upgrades would be implemented within existing infrastructure corridors covered by the PG&E O&M HCP. These activities are not expected to introduce new environmental impacts beyond those already accounted for under the existing HCP.

Federally listed plant species that may occur along the fiber line routes include San Joaquin woollythreads and California jewelflower. In addition, other sensitive plants species that have a CRPR ranking could also occur, see **Table 5.2-1A** for a complete list of plants species with a potential to occur. However, fiber line operations would not increase the risk to these species beyond current conditions, and compliance with HCP requirements would ensure impacts would be minimized or avoided.

Other special-status wildlife species that could occur within the existing transmission line corridors include San Joaquin kit fox, giant kangaroo rat, blunt-nosed leopard lizard, and tricolored blackbird, see **Table 5.2-1B** for a complete list of wildlife species with a potential to occur. Because all operation activities would be conducted within existing distribution structures and transmission line routes, operational impacts to these species would be avoided through adherence to the O&M HCP, including

applicable AMMs. Implementation of the PG&E O&M HCP would reduce impacts to plant and wildlife species during operation to less than significant.

Storm Water

Operation of the project would require the development of an approximately 1,000 feet by 100 feet storm water retention pond to manage stormwater runoff and protect downstream private lands from erosion and sedimentation. Erosion and sedimentation can adversely affect plants and wildlife, as described previously. Per **Section 5.16, Water Resources**, staff has recommended that a Drainage, Erosion, and Sedimentation Control Plan (DESCP) be prepared to control the effects of stormwater runoff during operation of the PG&E utility switchyard (**MM WATER-2**), and also that the project owner manage stormwater pollution from project construction activities by fulfilling the requirements contained in State Water Resources Control Board's NPDES (**MM WATER-1**). With implementation of these MMs, all impacts from stormwater runoff to downstream plants and wildlife would be reduced to less than significant.

b. Would the project 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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction- Less Than Significant with Mitigation Incorporated

Based on the analysis below, project construction and operation could significantly impact riparian habitat or sensitive natural communities but can be mitigated to below the level of significance with the incorporation of COCs **BIO-1** to **BIO-7** and **WATER-1**, **AQ-SC3**, **AQ-SC4**, and **WATER-1** as well as **MM BIO-1** to **MM BIO-6**, **MM BIO-9** to **MM BIO-10**, and **MM AQ-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

No riparian habitat or sensitive natural communities occur on the project site. However, riparian habitat is nearby including at Cantua Creek and Fresno Slough. Cantua Creek is nearest to the project site and is located ¼ to ½ miles south of the gen-tie line corridor and PG&E utility switchyard. It flows east from the foothills and meanders northward reaching West Harlan Avenue approximately 1,200 feet from the California Aqueduct. Fresno Slough, located approximately 3 miles north and east of the project site, flows in a north-south direction, and is too far away to be directly or indirectly impacted by the project. There are no sensitive natural communities on the project site or in the area. The nearest sensitive natural community is located on the west side of I-5 in the Ciervo Hills over 5 miles from the project site.

The gen-tie line would span the California Aqueduct, along W. Harlan Ave., and poles would be placed to avoid direct impacts to any riparian or sensitive habitat. The gen-tie line would not span Cantua Creek however construction activities would take place

nearby. At its closest point, Cantua Creek is approximately 200 feet south of and runs parallel to the gen-tie corridor. Therefore, direct impacts would be avoided. However, indirect impacts to riparian habitat could occur if invasive plants or noxious weeds are introduced or spread during construction. This could result from contaminated vehicles, equipment, or personnel carrying non-native seeds. Black mustard is considered moderately invasive by the CAL-IPC and is found within and near the project site. After construction, temporary disturbance areas, such as laydown and staging area as well as parking zones could become colonized by invasive weeds or generate fugitive dust, with weeds quickly establishing and threatening nearby sensitive habitats. Construction activities near Cantua Creek for the gen-tie line could introduce pollutants from construction vehicles and equipment, as well as generate fugitive dust. Exposure to dust and off-site sediment could alter the water temperature and chemistry of the creek, increase surface runoff, and lead to turbidity and sedimentation. Combined with pollutant exposure, these changes could have harmful effects on local aquatic plants and wildlife. These would be potentially significant impacts to riparian habitat without mitigation.

The applicant has proposed best management practices to be implemented during construction to minimize fugitive dust as well as measures that could help reduce the spread of invasive weeds, and also proposed the development and implementation of a Vegetation Management Plan. This plan would include measures for post-construction control of weeds (IP 2024p). Staff reviewed the applicant's proposed mitigation and incorporated the applicant's measures, as appropriate, into staff's proposed COC **BIO-7** (General Avoidance and Minimization Measures) which includes measures to limit soil disturbance and also requires use weed-free materials for erosion control and sediment barriers. In addition, staff's proposed COCs **BIO-1** to **BIO-6** would ensure biological monitoring during construction and worker environmental awareness training. Staff's proposed COC **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan) would ensure ongoing weed control and planting of suitable forage on the project site to prevent weed proliferation.

Staff proposes implementation of dust control measures as part of COCs **AQ-SC3**, and **AQ-SC4**, including enforcement of on-site speed limits and dust plume response, as described in **Section 5.1, Air Quality**. These measures would be part of air quality requirements which would prevent the project site from becoming a source of fugitive dust. In addition, the applicant has proposed the implementation of a Helicopter Use Plan to address fugitive dust from the rotor swept area if a helicopter is used during construction of the gen-tie line. The gen-tie line would cross the California Aqueduct. In addition, the plan proposed use of an on-site water truck to water the helicopter landing zone (HLZ) to prevent fugitive dust. Staff proposes COC **WORKER-SAFETY-1**, which would the development of Helicopter Code of Safe

Practices to be submitted to the CPM for review and approval, see **Section 4.4, Worker Safety and Fire Protection**, for a further discussion.

As discussed above, under CEQA criterion 'a' in the "Stormwater Runoff" subsection, staff proposes implementation of COC **WATER-1**, which would include the preparation and implementation of a SWPPP and would include BMPs to specify stormwater monitoring during construction to ensure that project construction does not contribute to the degradation of Cantua Creek, the California Aqueduct, or other aquatic areas of the project site. See **Section 5.16, Water Resources** for a further discussion.

With implementation of the above COCs, impacts to riparian habitat along Cantua Creek associated with fugitive dust and stormwater runoff would be reduced to less than significant.

Operation

Operation of the proposed project would not include any additional ground-disturbing activities, therefore any indirect impacts to aquatic features would already be mitigated, and erosion control requirements would already be implemented. As such, no additional direct impacts would occur. The potential for the continued spread of invasive plants or noxious weeds could occur through the use of vehicles in the project area. However, vehicle use would be limited to existing roads and disturbed areas and therefore would minimize the risk of introducing noxious and invasive weeds. With implementation of general biological conditions COCs **BIO-1** through **BIO-7** indirect impacts from operation activities would be reduced to less than significant.

Construction/Operation

PG&E Utility Switchyard and Downstream Network Upgrades

Riparian areas are defined by the USFWS as plant communities contiguous to and affected by hydrology of water bodies, transitioning between wetland and upland habitat, with distinctly different habitat than either adjacent area. Sensitive natural communities are described by CNDDDB and CDFW (2023a) and are reflected in **Table 5.2-2**. For the PG&E utility switchyard, no riparian habitat or other sensitive natural communities are within or adjacent to the project site. The nearest aquatic features are the ephemeral drainages and swales located west of the project site. The nearest riparian area is Cantua Creek which is located over ½ mile from the site. Therefore, there would be no direct or indirect impacts to sensitive natural communities or riparian habitat from construction of the PG&E utility switchyard.

One sensitive natural community, Fremont Cottonwood Woodland, occurs in the Cantua Substation study area, where it passes through the western and southern portions (this community grows in riparian areas). Sensitive natural communities do

not occur within the Los Banos, Midway, or Gates Substation study areas. In addition, atriplex scrub in the Scenario 1 Fiber Line and Scenario 3 Fiber Line study areas. The applicant has committed to avoid the grassland and atriplex scrub vegetation communities in Scenario 1 Fiber Line study area and HLZs would be located outside of these habitats, as feasible (RCI 2024cc). Installation of Scenario 3 Fiber Line would use of trenchless technology for underground fiber line installation at crossings. Riparian trees are located along Los Gatos Creek in the Scenario 2 Fiber Line Scenario 3 Fiber Line study areas.

There is no riparian habitat along the Scenario 1 Fiber Line study area. While several other aquatic features, including ephemeral drainages, roadside ditches, and manmade canals and agricultural ditches intersect the three alternative fiber line study areas and two of the substation study areas (Gates and Cantua), these are subject to maintenance and rerouting, they are not expected to have riparian vegetation. These areas would be completely avoided by project activities. For the Cantua substation, direct construction impacts would be avoided, as the microwave tower installation and work areas would be located outside Cantua Creek and the Fremont Cottonwood Woodland. Therefore, no direct impacts to sensitive natural communities or riparian habitat from construction would occur.

Indirect impacts could occur from runoff and soil compaction or erosion, fugitive dust, soil contamination from accidental fuel spills, and introduction of invasive species. Potential indirect construction impacts to the Fremont cottonwood woodland adjacent to Cantua Substation, and other sensitive natural communities and riparian areas, would be avoided and/or minimized through implementation of standard PG&E Construction Measures. As part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize indirect impacts to riparian habitats and sensitive natural communities: Worker Environmental Awareness Training, Standard Construction Practices, Access, Trash, Refueling, Waterways, Invasive Species, and Fugitive Dust Control. These are described further under the "San Joaquin kit fox" subsection above. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts.

Implementation of all relevant standard PG&E Construction Measures are recommended to address indirect impacts to riparian habitats and sensitive natural communities from construction of the PG&E utility switchyard and downstream network upgrades. Staff recommends implementation of **MM BIO-1 to MM BIO-6, MM BIO-9 to MM BIO-10, and MM AQ-1** to reduce impacts to less than significant.

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

Based on the analysis below, there would be no impact on state or federally protected wetlands from construction or operation of the proposed project.

Construction and Operation– *No Impact*

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

The applicant evaluated aquatic resources within the jurisdictional study area (project site and a 250-foot buffer) for a preliminary jurisdictional determination. The CDFW jurisdictional features identified within the study area (project site and 250-foot buffer) include the California Aqueduct and Cantua Creek. There would be no impacts to Cantua Creek which is located approximately 200 feet south of the gen-tie corridor. The California Aqueduct would be completely avoided and spanned by power poles and would similarly experience no adverse impacts.

There are several excavated palustrine wetlands within the jurisdictional study area, identified in the NWI as either unconsolidated bottom, unconsolidated shore, or emergent, and seasonally or semi-permanently flooded (USFWS 2023a). Three excavated basins located on the east side of the solar facility are mapped as intermittent riverine features in the NWI. Additional man-made agricultural ditches, canals, and excavated basins that were not documented in the NWI or NHD were mapped during the December 2022 reconnaissance and August 2023 delineation surveys. None of these features are considered jurisdictional under CDFW regulations, including the California Fish and Game Code, Porter-Cologne Water Quality Control Act, or Clean Water Act and not subject to these regulations. No impacts to state or federally protected wetlands would occur.

PG&E Utility Switchyard, PG&E Downstream Network Upgrades

The applicant identified four ephemeral swales (ES-1 through ES-4) and impoundments of two of the swales (Impoundment 1 and 2) west of the PG&E utility switchyard. These features are located within the buffer of the jurisdictional study area but more than 250 feet from the footprint of the project site. The swales are natural features formed in the draws of the hillsides are potentially subject to jurisdiction by the RWQCB and CDFW as waters of the state. These impoundments do not meet the SWRCB Procedures' definition of "Waters of the State" since they are man-made and used for stock watering. Stock ponds, as part of agricultural operations, are regularly maintained and are exempt from jurisdictional consideration under these criteria. Therefore, the impoundments are not subject to jurisdiction by the RWQCB or CDFW. Ephemeral features are not subject to USACE jurisdiction as they lack connectivity to traditional navigable waters or their tributaries and, therefore, are not considered federally jurisdictional. No impacts to state or federally protected wetlands would occur.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Based on the analysis below, project construction and operation could affect wildlife movement, wildlife corridors, or nursery sites and can be mitigated to below the level of significance with the incorporation of COC **BIO-1** to **BIO-7**, **BIO-9** and **BIO-17**.

Construction– *Less Than Significant with Mitigation Incorporated*

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

The project site and surrounding area consist of previously disturbed areas of active and retired agricultural lands. There are non-native annual grasslands located west of the project site near the PG&E utility switchyard (non-jurisdictional component) and gen-tie line corridor on the west side of I-5. The project components west of I-5 would be located near natural habitats in the Ciervo Hills and Cantua Creek south (TN 252974). These areas represent likely movement corridors for wildlife however, these are located outside of the project site. There are no Essential Habitat Connectivity Areas within the project site, the closest one is located immediately west of the gen-tie line, as depicted in **Figure 5.2-1**. The ACE (Areas of Conservation Emphasis) tool, developed by CDFW, classifies the project area as having a terrestrial connectivity of Rank 1, which indicates "limited terrestrial connectivity opportunity" (CDFW 2019a). Construction of the project would not change these designations as it would not significantly impact habitat connectivity or introduce substantial barriers to wildlife movement (see **Figure 5.2-2**).

Long-ranging terrestrial species, such as San Joaquin kit fox, are not expected to occur on the project site, east of I-5. However, there are areas of moderate and high suitability habitat east of I-5, located north and south of the gen-tie line corridor (RCI 2023rr). Most of the areas of moderate and high suitability habitat is located to west of I-5. No known wildlife nursery sites occur within the project site or vicinity.

Construction of the project, including the solar facility, BESS, other components, is not expected to substantially limit or impede foraging activity or general movements of wildlife species through the area. The perimeter fencing for the project site would include a wildlife-friendly design with a four to six inch gap at the bottom, to allow wildlife to pass through and prevent complete restriction of movement (RCI 2023c).

Wildlife movement in the area is likely to consist of short-range movement within an established territory, as previously described. Additionally, wildlife would be able to avoid the project areas during noisy construction activities, further minimizing potential impacts. To avoid and minimize impacts, staff also proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, to ensure

construction activities would be appropriately conducted and monitored to minimize or avoid impacts to wildlife species. These are described above under the “Foraging Birds and Common Wildlife” subsection under CEQA criterion ‘a’. In addition, staff recommends COC **BIO-9**, (Swainson’s Hawk Foraging Habitat Revegetation and Management Plan), revegetation and maintenance of site to promote Swainson’s hawk and burrowing owl habitat which could also benefit the San Joaquin kit fox and other species that could breed in the project vicinity.

Implementation of staff’s proposed COCs **BIO-7** through **BIO-7** and **BIO-9** would ensure that construction activities are monitored and mitigated to avoid or minimize impacts and prevent impacts to special-status wildlife species. Therefore, impacts to native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, or wildlife nursery sites would be reduced to less than significant.

Operation– *Less Than Significant with Mitigation Incorporated*

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The mitigation measures proposed by staff for Swainson’s hawk would include requirements for the project site to be revegetated with grasses and forbs, and also include tree plantings. If successful, the revegetation plan has the potential to return the site to a semi-natural state with the restoration, management, and maintenance of moderate-to-high quality grassland habitat. The revegetation of the project site would also benefit a host of other common and special status wildlife species. These measures are included in staff’s proposed COC **BIO-9** (Swainson’s Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan). The San Joaquin Valley was historically dominated by annual grasslands, much of which was later converted to agricultural lands. The majority of the site is retired agricultural lands which is tilled and disked to bare soil to reduce the proliferation of weeds. Revegetation of the site would greatly improve its use as foraging habitat and provide nesting opportunities for a variety of wildlife. Refer to the discussion under CEQA criterion “a” for additional details. The proposed project would not hinder movement of wildlife between IBAs or within the San Joaquin Valley.

As discussed, in the subsection “Collisions, Night Light Lighting, and Attraction of Migratory Birds and Insects”, the project has the potential to confuse or attract migratory birds travelling within the Pacific Flyway, potentially in injury or mortality caused by collision with project features, such as solar panels. This would be a potentially significant impact to migratory birds without mitigation. Therefore, staff recommends implementation of COC **BIO-17** (Avian Solar Conservation Plan), which would require monitoring and adaptive management of the project to identify, avoid, and minimize impacts to migratory bird species. With implementation of the above

COCs **BIO-9** and **BIO-17**, impacts from operation would be reduced to less than significant.

Construction and Operation

PG&E Utility Switchyard and Downstream Network Upgrades

The USFWS Recovery Plan for Upland Species of the San Joaquin Valley identifies linkage areas that are important corridors for wildlife species, such as San Joaquin kit fox and blunt-nosed leopard lizard, (Table 12 and Figures 72-73) (USFWS 1998). The project site is within the first linkage area which covers the western section of Fresno County and includes the valley floor west of the San Joaquin River and Fresno Slough. The project site is also within designated “link areas” identified in the San Joaquin Kit Fox Recovery Areas (USFWS 2007). The project area has an ACE terrestrial connectivity value of Rank 1 “limited terrestrial connectivity opportunity” to Rank 4 “conservation planning linkages” (CDFW 2019a). The proposed project would not alter these designations (see **Figure 5.2-2**).

The PG&E utility switchyard would be constructed on 50-acre parcel, which is currently an almond orchard, and would include the installation of an up to 20-foot security fence around the site (RCI 2024u). The relatively small footprint of the switchyard within the landscape is not expected to impede wildlife movement (RCI 2024ww). Although the project site is adjacent to suitable habitat for the San Joaquin kit fox, the existing almond orchard does not constitute suitable habitat for this species. San Joaquin kit fox rely on open grasslands and areas with sparse vegetation for foraging and denning. Therefore, the construction of the PG&E utility switchyard is not expected to significantly impact kit fox, or other wildlife movement, as the species is known to navigate around fenced infrastructure and wildlife species could continue to utilize nearby open lands as travel corridors. No wildlife nursery sites occur within the project site or vicinity.

For the PG&E downstream network upgrades, construction activities for the three alternative fiber line scenarios and four alternative substations would primarily include installation of structures and equipment on existing overhead electric transmission line structures or at existing substations. 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 the project area, I-5 is likely acts as a barrier to non-avian wildlife movement (RCI 2024cc). A directional bore may be used to underground the Scenario 1 Fiber Line or Scenario 2 Fiber Line where it crosses I-5 (RCI 2024z). While transmission lines may have the potential to adversely affect migratory birds, the downstream network upgrades would be installed on existing transmission lines. Therefore, the upgrades would not introduce a new linear feature that could disrupt wildlife movement. Impacts from underground installation would similarly be temporary and wildlife movement would likely remain uninterrupted by these activities. The temporary impacts from construction and impacts from ongoing

maintenance activities would be similar in nature to current O&M activities. No wildlife nursery sites occur within the project site or vicinity. There would be no impact.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Based on the analysis below, construction and operation of the project would not conflict with any local policies or ordinances protecting biological resources and can be mitigated to below the level of significance with the incorporation of COCs **BIO-1** to **BIO-8**, **BIO-10**, **BIO-12**, **WORKER SAFETY-1** and **WORKER SAFETY-2** and MMs **MM BIO-1** to **MM BIO-20** and **MM WORKER SAFETY-1**.

Construction and Operation— *Less Than Significant with Mitigation Incorporated*

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The Fresno County Open Space and Conservation Element provides policies designed to protect water quality and quantity of the streams, creeks, and groundwater basins, conserve the function and values of wetland communities and associated riparian habitat, protect, restore, and enhance habitats supporting fish and wildlife species, and preserve and protect natural vegetation resources, such as oak woodlands and riparian habitat (Fresno 2024). The County of Fresno does not have a tree removal ordinance; therefore, tree removal is not subject to compliance with any county regulations (Fresno County 2024). Tree removal is not proposed for the jurisdictional components of the project. However, if any trees are identified as hazardous during construction or operations, tree trimming or tree removal may be required to ensure public safety (RCI 2023hh). As discussed previously, the project site was once active agriculture but is now primarily retired agricultural lands which are bare or contain invasive weeds and non-native grasses with approximately 30 suitable nesting trees for Swainson's hawk and other raptors. There are no wetlands, creeks, riparian, or other natural vegetation resources on the project site.

Fresno County General Plan Policy OS-E.19 is designed to protect nesting birds by requiring a qualified biologist to conduct pre-construction surveys and where active nests are found a buffer would be established. To avoid and minimize impacts, staff proposes implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, described above under the "Foraging Birds and Common Wildlife" subsection in CEQA criteria "a". In addition, staff recommends implementation of COCs **BIO-8**, **BIO-10**, and **BIO-12** which would require pre-construction nesting bird surveys, impact avoidance, and mitigation measures for Swainson's hawk, burrowing owl, and other protected bird species. These proposed conditions of certification would reduce both direct and indirect impacts on common and special-

status wildlife, including nesting birds. These measures would ensure conformance with Fresno County General Plan Policy OS-E.19.

The installation of the gen-tie line may require the use of a helicopter and development HLZs for wire stringing activities which could potentially have adverse impacts on nesting avian species, particularly Swainson's hawk and other common and special status avian species. As discussed above under checklist item "a", staff determined that COC **WORKER-SAFETY-1** would be necessary to avoid and minimize impacts to nesting birds from helicopter use and incorporated the requirement for a Designated Biologist(s) to monitor helicopter use to avoid avian impacts, including impacts to nesting Swainson's hawks and other avian species. If helicopter use is needed during operations, staff has proposed similar requirements for a Designated Biologist to monitor helicopter use to avoid avian impacts as part of COC **WORKER-SAFETY-2**. See **Section 4.4, Worker Safety and Fire Protection**, for a further discussion of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.

The project is a renewable energy project subject to review under CEQA and under the jurisdiction of the CEC and requires agency coordination to address protected species. As described in the "Direct and Indirect Impacts" subsection, under CEQA criteria "a" through "d," the proposed project would be consistent with the Fresno County Open Space and Conservation Element during construction and operation through the implementation of staff's proposed COCs **BIO-1** through **BIO-16**. With implementation of the COCs discussed above, construction of the project would not conflict with any local policies or ordinances and impacts would be reduced to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Fresno County has policies designed to protect water quality and quantity of the streams, creeks, and groundwater basins; to conserve the function and values of wetland communities and associated riparian habitat; to protect, restore, and enhance habitats supporting fish and wildlife species; and preserve and protect natural vegetation resources, such as oak woodlands and riparian habitat.

For the PG&E utility switchyard, no riparian habitat or other sensitive natural communities exist within or adjacent to the project site. The nearest aquatic features are the ephemeral drainages and swales located west of the project site. The nearest riparian area is Cantua Creek which is located over 1/2 mile from the site. Therefore, there would be no direct or indirect impacts to sensitive natural communities or riparian habitat from construction of the PG&E utility switchyard. Construction of the PG&E utility switchyard would require removal of a 50-acre almond orchard. However, the site is located in the unincorporated part of Fresno County and no tree removal ordinances would apply on private property.

The PG&E downstream network upgrades would include construction activities at four existing PG&E substations (Los Banos, Gates, Midway, and Cantua). All work would

take place within previously fenced and disturbed areas and no impacts are expected. However, PG&E would implement standard PG&E Construction Measures and therefore, there would be no impact to resources protected by local policies and ordinances during construction of these non-jurisdictional components the project.

Fresno County General Plan Policy OS-A.18 requires the integration of natural watercourses into new developments and the establishment of buffer zones between waterways and urban areas. While ephemeral drainages intersect portions of the three alternative fiber line study areas, these locations are not classified as urban. Construction activities would avoid direct and indirect impacts on natural watercourses through complete avoidance or the use of trenchless technology for underground fiber line installation. Fresno County General Plan Goal OS-E (and 18 associated policies) prioritizes the preservation of natural vegetation, wildlife habitat, and migration corridor. Fiber line installation such as undergrounding would occur within an existing PG&E transmission line and ROW and impacts would be temporary. Other direct and indirect impacts from fiber line installation would be mitigated through implementation of PG&E Standard Construction Measures.

As discussed above under CEQA criterion “a” construction of the downstream network upgrades would be completed using a combination of helicopter and ground crews. Helicopter use could have the most significant impact on bird species, potentially disrupting avian behavior, including flight paths or nesting activities. Staff is proposing **MM WORKER SAFETY-1** which would incorporate the use of a full-time avian monitor implementation of a Helicopter Use Plan. This would be necessary to ensure all mitigation measures for avoidance and minimization of impacts to Swainson’s hawks and other avian species are implemented and effective. See the **Section 4.4, Worker Safety**, for more information.

As described in the “Direct and Indirect Impacts” subsections under CEQA criteria “a” through “d”, the proposed project would be consistent with the Fresno County Open Space and Conservation Element through the implementation of PG&E Standard Construction Measures. As part of the standard PG&E Construction Measures, PG&E would implement measures to minimize direct and indirect impacts to biological resources. Staff reviewed these proposed measures and included as MMs where appropriate to reduce potential environmental impacts. In addition, staff has proposed a mitigation measure to avoid impacts to western red bat during tree removal, included as **MM BIO-20**. These would align with local policies and ordinances to protect plant and wildlife species and their habitats.

Implementation of all relevant standard PG&E Construction Measures are recommended to address direct and indirect impacts to from construction of the PG&E utility switchyard and downstream network upgrades and comply with local policies and ordinances to protect plant and wildlife species and their habitats. Staff recommends implementation of **MM BIO-1** to **MM BIO-20**, and **MM AQ-1** to reduce impacts. With implementation of the MMs discussed above, construction of the project

would not conflict with any local policies or ordinances and impacts would be reduced to less than significant.

As discussed above under CEQA criterion “a”, operation of the PG&E utility switchyard would likely be conducted as part of the overall O&M Program for the PG&E Transmission and Distribution System in the San Joaquin Valley and would comply with the requirements of the PG&E San Joaquin Valley O&M HCP. In addition, the fiber line scenario selected by PG&E and the substation upgrades would be implemented within existing infrastructure corridors covered by the PG&E O&M HCP. These activities are not expected to introduce new environmental impacts beyond those already accounted for under the existing HCP. Implementation of the PG&E O&M HCP would reduce impacts to plant and wildlife species during operation to less than significant. Operation would not conflict with any local policies or ordinances, including Fresno County’s Goal OS-E, and no impact would occur.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Based on the analysis below, the construction and operation of the project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan and there would be no impact.

Construction and Operation— *No Impact*

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

There is no adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other local, regional or state plans, on or adjacent/next to the project site. Therefore, the project would not conflict with any such plans and there would be no impact.

PG&E Utility Switchyard and Downstream Network Upgrades

There is no adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other local, regional or state plans, on or adjacent/next to the project site that would apply to construction of the proposed PG&E utility switchyard. The proposed construction activities are not subject to any conservation plans. Construction of the PG&E utility switchyard is not a covered activity under the PG&E O&M HCP for the San Joaquin Valley. In addition, O&M activities for facilities and equipment installed as part of the selected alternative fiber line scenario and the upgrades at existing PG&E substations do not meet the definition of limited minor new construction in the HCP. Therefore, construction activities for the selected alternative fiber line scenario and for the substations are not considered covered activities would

also not be covered under the PG&E O&M HCP for the San Joaquin Valley (RCI 2024cc).

Construction 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. Therefore, they would comply with the requirements of the PG&E O&M HCP and its Implementing Agreement, and permits issued by USFWS and CDFW, under the federal ESA and CESA. However, PG&E would not have take authorization under the federal ESA or CESA for any species covered under the PG&E O&M HCP so full avoidance of take is necessary. If project activities may result in take under ESA or CESA, PG&E would need to coordinate with the USFWS and CDFW to obtain separate incidental take authorization, if required. Therefore, the project would not be in conflict with any such plans and there would be no impact.

As discussed above under CEQA criterion “a” for operation of the PG&E utility switchyard, the PG&E utility switchyard is not currently covered under the PG&E San Joaquin Valley O&M HCP for the San Joaquin Valley. PG&E may seek to include the facility under the HCP through a regulatory process for approval from the USFWS and CDFW to include in the PG&E San Joaquin Valley O&M HCP. If the facility is added to the PG&E HCP, required avoidance and minimization measures (AMMs) would be implemented to reduce any potential impacts on these species during O&M activities. However, operation of the PG&E utility switchyard would likely 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, and permits issued by USFWS and CDFW, under the federal ESA and CESA. Therefore, the project would not be in conflict with any such plans and there would be no impact.

5.2.2.3 Cumulative Impacts

Construction and Operation— *Less Than Significant with Mitigation Incorporated*

The geographic scope of staff’s preliminary analysis of cumulative effects to special status wildlife encompasses Fresno County and the San Joaquin Valley to make a broad, regional evaluation of the impacts of reasonably foreseeable future projects that threaten biological resources. For some biological resources, a different geographic scope was warranted for each impact area considered. For example, the use of a roughly 15-mile radius for the Swainson’s hawk, whereas the cumulative assessment of waters and wetlands is dependent on the nature and type of anticipated impact, and, for this particular project, restricted to water flows on and off the site, as no watercourses common to both the project and the cumulative project

exist. This is a smaller more restrictive area than what was considered for Swainson's hawk.

Over the past decades, the San Joaquin Valley has been subject to systemic, wide-ranging anthropogenic changes that have changed the landscape from grasslands in the valley floor to predominantly agricultural uses, channelizing, excavating, or otherwise "improving" scattered resources such as wetlands and drainages on the landscape. Developments, particularly utility-scale solar, are both pre-existing and planned for the region, as based on least-conflict development planning for this region, which identified over 470,000 acres for development in the Valley (Pearce et al 2016). Other developments such as housing, roads and highways, and transmission lines exist.

This qualitative assessment of cumulative effects was based on a review of the project's onsite and offsite survey data, databases, and literature. In addition to the combined effects of habitat loss and direct mortality for Swainson's hawk and burrowing owl, staff identified a range of indirect effects that combine with similar effects from other past, present, and foreseeable future project that must be factored into the cumulative analysis. This suite of indirect impacts to which the project would contribute includes: introduction and spread of invasive weeds; diminished habitat values from increased noise and lighting; dust and air pollution; human disturbance; and other factors contributing to a significant cumulative effect.

Projects considered for cumulative analysis are listed below:

- FC-1: Akhavi LLC Project
- FC-2: Arroyo Pasajero Bridge Replacement Geotechnical
- FC-3: Sentry Ag Services Project
- FC-4: Kamm Avenue Pistachio
- FC-5: WTC Riverdale, LLC Project
- FC-6: Seneca Resources Corporation Project
- FC-7: Landfill Gas Conditioning System & Pipeline
- FC-8: Gas Station and Convenience Store
- FC-9: Heartland Hydrogen Project
- FC-10: Agricultural Commercial Center
- FC-11: Multi use/Freeway Commercial Development
- FC-12: Scarlet Solar
- FC-13: Sonrisa Solar Project
- FC-14: Tranquility Solar Project

- FC-15: Luna Valley Solar
- FC-16: H2B2 USA, LLC, Project
- FC-18: Five Points Pipeline, LLC, Project
- FC-20: Agricultural Operations Facility Project
- FC-21: Plug Project Holdings Co. Project
- FC-23: Microwave Tower Project
- FC-24: Tranquility Wastewater Treatment Plant Improvement Project
- WWD-1: Westlands Solar Park (WSP)
- FC-25: BayWa.r.e/Cornucopia Hybrid Solar Project
- FC-26: Manning 500/230 kV Substation Project
- FC-27: CES Electron Farm One
- FC-28: San Luis West Solar Project
- FC-30: Key Energy Storage

According to **Appendix A, Figure A-1**, cumulative projects (as listed above) within 15 miles of the site are located north, east, and south of the project, but none are located to the west. Projects were excluded from biological resources analysis if they were determined to have no biological resources present on-site or adjacent the project because they were to occur within highly developed areas, if the project type typically has no cumulative environmental effects, or if known construction timing of the projects caused them to not qualify as “cumulative”.

Cumulative Effects to Swainson’s Hawk

Of the projects listed above, staff considered the major threats and limitations to this species. For the Swainson’s hawk, loss of habitat, particularly foraging habitat, is a long-standing threat particularly in the Central Valley, along with the loss of nesting habitat (CDFW 1993). These hawks frequently choose mature trees along riparian corridors for their nesting sites, and development of agricultural fields may result in mature trees being removed or riparian corridor habitat being altered. Of the listed projects (above), with known or approximately-known sizes, a total of approximately 34,500 acres will be developed if these projects are all approved and built (some are already approved) (**Table A-1, Appendix A**).

As detailed in COC **BIO-9**, Swainson’s Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan, the applicant has developed an onsite mitigation strategy to consist of revegetation of the site with grasses and forbs, using a seed mix(es) to be determined by scientific study, under Dr. Grodsky (which would require reporting and monitoring and consultation by the CPM). Furthermore, the project would remove no existing trees unless necessary (for safety purposes), entail

planting of new, quick-growing trees suitable for Swainson's hawk nesting (such as eucalyptus), and installation of temporary nesting perch structures. This effect of these activities is anticipated to provide habitat uplift (described in "Swainson's Hawk – Foraging") such that resulting onsite foraging habitat will provide higher quality foraging habitat than what exists on the site currently.

Staff's proposed COC **BIO-10** (Swainson's Hawk Impact Avoidance, Minimization, and Mitigation Measures for Take) which requires measures such as trash abatement to deter predators, dust and erosion control, clear delineation of project boundaries and sensitive habitats, surveys and installation of no-activity protective nest buffer zones, and other actions to minimize impacts on Swainson's hawk and their habitats during construction activities would further reduce impacts to the species.

Further, staff has recommended COC **BIO-11** (Swainson's Hawk Conservation Easement and Revegetation Security), which would establish a Security amount, required prior to start of construction, to ensure that adequate funding is available to support the success of COC **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan), and would further require conservation easements to be placed around existing nesting trees as mapped by the applicant (RCI 2023hh). As stated above, the Security ensures that financial resources would be available to the CEC CPM to fulfill the mitigation requirements for Swainson's hawk foraging habitat, in the event success criteria are not met.

The potential loss of habitat from all proposed future projects is significant, and the project's contribution to that effect is cumulatively considerable. The project will also contribute to a cumulatively considerable impacts such as from noise and lighting, weed and dust proliferation, as thoroughly described under "Checklist Question a" all of which ultimately degrade the function and values of the remaining habitat.

The project's contribution to effects and would be mitigated to a level less than cumulatively considerable through implementation of staff's proposed COCs **BIO-1** to **BIO-7** and **BIO-9** to **BIO-11**.

Cumulative Effects to Burrowing Owl

The project's contribution to the cumulative loss of burrowing owl habitat is comparable to the cumulative loss of Swainson's hawk habitat, described above. This is because the threats to this species are largely the same (e.g. habitat loss, where they nest in short grass). The potential loss of habitat from all proposed future projects is significant, and the project's contribution to that effect is cumulatively considerable. The project will also contribute to a cumulatively considerable impact from noise and lighting, weed and dust proliferation, all of which ultimately degrade the function and values of the remaining habitat.

Staff also recommends implementation of **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan), which requires

revegetation and maintenance of the site to promote Swainson's hawk habitat, and may also provide burrowing owl foraging habitat by increasing prey populations; Condition **BIO-11**, to provide financial assurances in the form of a security, to ensure the success of Condition **BIO-9**; Condition **BIO-12**, to provide a variety of measures to avoid, minimize, and mitigate take of the species; and Condition **BIO-13** to further mitigate significant impacts to burrowing owl and their foraging habitat through the purchase of either 200 acres of offsite habitat, or purchase of 200 credits of offsite habitat.

Implementation of the above COCs, in conjunction with COCs **BIO-1** to **BIO-7**, impacts to burrowing owl and their foraging habitat would be reduced and full mitigation under CESA would be provided. CEC staff conclude that this mitigation approach mitigates for impacts to foraging habitat for this species. The project's contribution to these indirect effects and loss of habitat would be mitigated to a level less than cumulatively considerable through implementation.

Cumulative Effects to Common and Special-Status Nesting Birds, Including Tricolored Blackbird

Numerous common and special status bird species have the potential to nest onsite, including the tricolored blackbird. Nesting opportunities include trees, transmission towers, and retired and managed agricultural land. However, the majority of the site is retired agricultural lands which are tilled and disked to bare soil to reduce the proliferation of weeds which reduces nesting opportunities. In the "Common and Special-Status Nesting Birds, Including Tricolored Blackbird" subsection, staff identified loss of nesting habitat and disturbance from construction activities during breeding season as direct impacts (among others), and indirect impacts such as degradation of habitat from dust proliferation and the spread of weeds (among others). Tricolored blackbird once formed massive nesting colonies in the Central Valley but have declined due to destruction of wetlands and native grasslands. Specifically, this species gregarious behavior (large breeding colonies) "renders colonies vulnerable to large-scale nesting failures due to destruction of active nests in its agricultural habitats and high levels of predation in its little remaining native emergent marsh habitat" (p. 2, Biological Diversity and Wild Nature Institute 2014). Indeed, up to 20,000 nests and young have been documented to be lost at one time, in one field (Audubon California 2025). Furthermore, because this species does not nest routinely at the same location, it can be difficult to track and predict movements.

The potential loss of habitat from all proposed future projects is significant, and the project's contribution to that effect is cumulatively considerable. The project will also contribute to a cumulatively considerable impact such as from noise and lighting, weed and dust proliferation, as thoroughly described under "criterion a" all of which ultimately degrade the function and values of the remaining habitat.

Staff has accepted and incorporated applicant's proposed revegetation plan as mitigation for foraging habitat for Swainson's hawk (**BIO-9**). While originally

proposed for Swainson's hawk, the goal of revegetation of the site would be to effectively restore the habitat to pre-agricultural habitat such as forbs and grasses. Not only would this habitat be beneficial to Swainson's hawk, it may be beneficial to a broad variety of common and special status nesting birds, including the tricolored blackbird.

The project's contribution to these indirect effects and loss of habitat would be mitigated to a level less than cumulatively considerable through implementation of **BIO-8**, which would entail preconstruction surveys for nesting particularly for tricolored blackbird and ensure 100% avoidance of this species, preconstruction surveys, avoidance and minimization measures, and compensatory mitigation; measures for addressing impacts from noise, lighting, and other indirect effects through a variety of measures in COC **BIO-1** through **BIO-7**.

Cumulative Effects to Crotch's Bumble Bee

As mentioned in "A Petition to the State of California Fish and Game Commission to List the Crotch Bumble Bee (*Bombus crotchii*), Franklin's bumble bee (*Bombus franklini*), Suckley Cuckoo Bumble Bee (*Bombus suckleyi*), and Western Bumble Bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act" (Xerces et al, 2018, p 37), this species was historically known as occurring in the San Joaquin Valley, where abundant wildflowers grew across vast prairies. While the general components of this species' needs are known, such as floral resources, habitat and distribution are generally poorly understood. To help fill this gap, a collaboration among the CDFW, the Bureau of Land Management, and the Xerces Society for Invertebrate Conservation was formed, to train volunteer scientists to collect information considered critical to imperiled bumble bees. This collaboration also produced the California Bumble Bee Atlas, which uses the Bumble Bee Watch website (Bumble Bee Watch 2025) to collect and portray data. There is a lone report northeast of the junction of Highway 145 and Highway 99 from 2024. There are no other reports of this species in the area, and staff has limited information on distribution of this species in the area. Generally, Crotch's bumblebee have a limited potential to occur in the area given the ongoing agricultural practices in the area and the limited habitat availability.

As mentioned in "Cumulative Effects to Swainson's Hawks" and detailed in COC **BIO-9**, the applicant has developed an onsite mitigation strategy to consist of revegetation of the site with grasses and forbs, using a seed mix(es) to be determined by scientific study. This revegetation is meant to mimic natural conditions and plant species assemblages, and nurture pollinator activity (RCI 2023hh). Final seed palettes have yet to be determined and will be determined based on success. Additionally, the cessation of disking as a management tool for agricultural lands will benefit this species by allowing nesting and overwintering by queens.

The potential loss of habitat from all proposed future projects is not considered significant due to the lack of data on distribution, and the project's contribution to that

effect is not considered cumulatively considerable. The project will contribute to a cumulatively considerable impact such as from noise and lighting, weed and dust proliferation, as thoroughly described under CEQA criterion “a” all of which ultimately degrade the function and values of the remaining habitat.

The project’s contribution to these indirect effects and loss of habitat would be mitigated to a level less than cumulatively considerable through implementation of **BIO-16**, which would require preconstruction surveys for this species, ensuring 100% avoidance of this species, preconstruction surveys, avoidance and minimization measures; measures for addressing impacts from noise, lighting, and other indirect effects through a variety of measures in COC **BIO-1** through **BIO-7**.

Cumulative Effects of PG&E Utility Switchyard and Downstream Network Upgrades

As previously mentioned, **Appendix A, Figure 5-1** depicts projects considered cumulative. The list of cumulative projects contains no projects located in the foothills to the northwest, west, or southwest of the project (west of I-5), where the suite of wildlife species potentially impacted by the PG&E utility switchyard and downstream network upgrades is distinct from those wildlife species known from the valley floor, where the jurisdictional components of the project lie. These species (such as San Joaquin kit fox, blunt-nosed leopard lizard, Lost Hills crowscale, and other special status plant and wildlife species with potential to occur) would experience no adverse impacts from cumulative projects and are not discussed further here.

5.2.3 Jurisdictional Project Components’ Conformance with Applicable LORS

Table 5.2-3 below details staff’s determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, “Proposed Conditions of Certification,” contains the full text of the referenced conditions of certification.

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Federal	
Federal Endangered Species Act (16 USC §§ 1531 et seq. and 50 CFR part 17.1 et seq.)	
Designates and protects federally threatened and endangered plants and animals and their critical habitat. Applicants for projects that could result in adverse impacts on any federally listed species are required to mitigate potential impacts in consultation with USFWS.	Yes. The proposed project would include COCs to reduce impacts to any federally threatened or endangered plants or animals and ensure compliance (Section 5.2.2.2).

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

Bald and Golden Eagle Protection Act (16 USC §§ 668 to 668c)

Provides for the protection of the bald and golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures.	Yes. The proposed project would include COCs to protect bald and golden eagle by prohibiting take, possession, and commerce of such birds and ensure compliance (Section 5.2.2.2).
---	---

Migratory Bird Treaty Act (16 USC §§ 703 to 711)

Makes it unlawful to take or possess any migratory nongame bird (or any part of such a migratory nongame bird as designated in the Act.	Yes. The proposed project would include COCs to reduce impacts to resident and migratory birds and ensure compliance (Section 5.2.2.2).
---	--

Clean Water Act §§ 401 and 404 (33 USC §§ 1251 to 1376)

Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the USACE for a discharge of dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from a RWQCB for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards.	Yes. The proposed project would not impact any waters of the U.S. and ensure compliance (Section 5.2.2.2).
---	---

Rivers and Harbors Act § 10 (33 USC §§ 401 et seq.)

Requires authorization from USACE for the construction of any structure in or over any navigable water of the U.S.	Yes. The proposed project would not require construction of any structure in or over navigable waters of the U.S. within the Project area and ensure compliance.
--	---

State

California Endangered Species Act (CFGC §§ 2050 to 2098)

Species listed under this act cannot be "taken" or harmed, except under specific permit.	Yes. The proposed project would include COCs to reduce, avoid, or mitigate avoid impacts to any state threatened or endangered plants or animals and ensure compliance (Section 5.2.2.2).
--	--

Fully Protected Species (CFGC §§ 3511, 4700, 5050, and 5515)

Lists animals species that are fully protected in California and states that these species may not be "taken" or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species. However, California Senate Bill 147 (SB 147), passed in July 2023, authorizes CDFW to issue permits for the incidental take of fully protected species for certain projects, including renewable energy.	Yes. The proposed project would include COCs to avoid impacts to FP animal species (blunt-nosed leopard lizard, golden eagle, and California condor) and ensure compliance (Section 5.2.2.2).
---	--

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

Migratory Birds (CFGF §§ 3503, 3503.5, 3513, and 3800)

Makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any migratory bird.	Yes. The proposed project would include COCs to reduce or avoid impacts to migratory birds and ensure compliance (Section 5.2.2.2).
--	--

Furbearing Mammals (CFGF §251.1 and Title 14 §460)

Contains regulations for taking furbearing mammals, including prohibiting the harassment or unapproved take of furbearing mammals, including fisher, American badger, Sierra Nevada Mountain beaver, Pacific marten, and Sierra red fox.	Yes. The proposed project would include COCs to reduce or avoid impacts to furbearing mammals and ensure compliance (Section 5.2.2.2).
--	---

Native Plant Protection (CFGF §§ 1900 et seq.)

Designates state rare and endangered plants and provides specific protection measures for identified populations. The Act also prohibits the take of rare and endangered native plants with exceptions for agricultural and nursery operations, emergencies, or in proper coordination with CDFW under specific circumstances.	Yes. The proposed project would not impact any state rare and endangered plants (Section 5.2.2.2).
--	---

Porter-Cologne Water Quality Control Act (California Water Code Division 7)

Directs responsibility to RWQCBs for granting Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permits for discharges to waters of the state. The Act also establishes water quality objectives to protect the beneficial uses of surface and groundwater resources.	Yes. The proposed project would not require discharges to waters of the state (Section 5.2.2.2).
--	---

California Lake and Streambed Alteration Notification/Agreement (CFGF §1602)

Prohibits alteration of any water body meeting the CDFW jurisdictional requirements of the CFGF without the appropriate permits.	Yes. The proposed project would not impact any jurisdictional waters of the State. (Section 5.2.2.2).
--	--

Local

Fresno County General Plan

Open Space and Conservation Element.

Policy OS-A.19 Water Discharge Pollution Mitigation. New developments near water bodies or aquifer recharge areas must mitigate potential pollutant discharges into stormwater, rivers, streams, creeks, or reservoirs. (RDR)	Yes. The proposed project would include COCs to reduce impacts to rivers, creeks, reservoirs, or substantial aquifer recharge areas, and mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters. and ensure compliance (Section 5.2.2.2).
Policy OS-A.20 Minimization of Sedimentation and Erosion. The County shall control grading, vegetation removal, road and bridge placement, and off-road vehicle use to reduce sedimentation and erosion. Grading during the rainy season is discouraged unless mitigated to protect creeks and riparian habitats. (RDR/PSP)	Yes. The proposed project would include COCs to reduce impacts minimize sedimentation and erosion and discourage grading during the rainy season and ensure compliance (Section 5.2.2.2).

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

Policy OS-A.21 Best Management Practices. The County shall require feasible and practical BMPs to protect streams from construction and urban runoff impacts. (PSP)	Yes. The proposed project would include COCs to reduce impacts to streams using BMPs, and ensure compliance (Section 5.2.2.2).
Policy OS-D.1 The County shall support the no-net-loss wetlands policies of the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game, ensuring coordination at all project review levels to implement appropriate mitigation measures.	Yes. The proposed project would not impact any wetlands (Section 5.2.2.2).
Policy OS-D.2 The County shall require new development to fully mitigate wetland loss in regulated wetlands to achieve "no-net-loss" through avoidance, minimization, or compensation. The County shall support mitigation banking programs to offset impacts on rare, threatened, and endangered species and their habitats in wetland and riparian areas.	Yes. The proposed project would not impact any wetlands (Section 5.2.2.2).
Policy OS-D.3 The County shall require development to prevent significant degradation of wetlands' area, value, or function due to pollutants and siltation. New developments must implement Best Management Practices (BMPs) to support this effort.	Yes. The proposed project would not impact any wetlands (Section 5.2.2.2).
Policy OS-D.4 The County shall establish riparian protection zones around natural watercourses to preserve valuable wildlife habitat. These zones include the bed and banks of low- and high-flow channels, associated riparian vegetation, and buffer areas of 100 feet from the top of the bank of unvegetated channels and 50 feet from the outer edge of the riparian vegetation dripline.	Yes. The proposed project would avoid work within a designated riparian protection zones (Section 5.2.2.2).
Policy OS-D.5 The County shall identify and conserve upland habitat areas adjacent to wetlands and riparian zones that are essential for wildlife feeding, hibernation, or nesting.	Yes. The proposed project would include COCs to conserve remaining upland habitat areas adjacent to wetland and riparian areas and ensure compliance (Section 5.2.2.2).
Policy OS-D.6 The County shall require new developments to preserve and enhance native riparian habitat unless removal is necessary for public safety or flood control. If riparian habitat is modified or destroyed for flood control, developers must create new habitat within the same watershed sub-basin at a 3:1 compensation ratio.	Yes. The proposed project would not have direct impacts on riparian habitat (Section 5.2.2.2).
Policy OS-E.1 The County shall support efforts to avoid net loss of important wildlife habitat where practicable. When habitat loss is unavoidable, adequate mitigation shall be required to replace the function and value of affected habitat, particularly for special-status species and unique wildlife resources. Mitigation may include creation,	Yes. The proposed project would include COCs to avoid and mitigate any loss of wildlife habitat and coordination with CDFW and USFWS has occurred to ensure compliance (Section 5.2.2.2).

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

restoration, conservation easements with perpetual management, or mitigation banking. The County shall recommend coordination with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to ensure appropriate mitigation. Important habitats include nesting, breeding, foraging areas, spawning grounds, migratory routes, stopover areas, oak woodlands, vernal pools, wildlife corridors, and other critical ecosystems.	
Policy OS-E.2 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 information consultation with the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife.	Yes. The proposed project would include COCs to reduce impacts to streams using BMPs and ensure compliance (Section 5.2.2.2).
Policy OS-E.4 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 U.S. Fish and Wildlife Service.	Yes. The proposed project would include COCs to implement sound wildlife habitat management practices and ensure compliance (Section 5.2.2.2).
Policy OS-E.6 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.	Yes. The proposed project would include COCs to conserve native vegetation and ensure compliance (Section 5.2.2.2).
Policy OS-E.7 The County shall continue to closely monitor pesticide use in areas adjacent to habitats of special status plants and animals.	Yes. The proposed project would include COCs to monitor pesticide use and ensure compliance (Section 5.2.2.2).
Policy OS-E.8 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.	Yes. The proposed project would include COCs to promote effective and safe pest control and ensure compliance (Section 5.2.2.2).
Policy OS-E.9 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 upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special	Yes. The proposed project has been evaluated by qualified biologists with mitigation proposed and evaluated to ensure compliance (Section 5.2.2.2).

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

status plants or animals. Such evaluation will consider the potential for significant impacts on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.	
Policy OS-E.11 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.	Yes. The proposed project would have no impact on special status fish or wildlife or their migratory patterns (Section 5.2.2.2).
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.	Yes. The proposed project would have no impact on wetlands, riparian habitat, or meadows (Section 5.2.2.2).
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.	Yes. The proposed project does not contain areas that have unusually high value for fish and wildlife propagation (Section 5.2.2.2).
Policy OS-E.17 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.	Yes. The proposed project would include COCs to preserve habitat for rare or endangered animal and plant species and ensure compliance (Section 5.2.2.2).
Policy OS-E.19 For development projects requiring tree or habitat removal, a qualified biologist must survey for nesting birds within 14 days before work begins if activities occur during nesting season (Feb 1–Sept 15). Surveys cover the site and a 500-foot buffer. If active nests are found, work must stay outside a buffer—at least 250 feet for non-raptors and 500 feet for raptors, unless adjusted by the biologist. Buffers protect nesting behavior, and work must stop if birds show distress. Construction resumes only when birds are no longer reliant on the nest. A compliance report must be submitted within 30 days.	Yes. The proposed project would include COCs to require surveys for nesting birds, installation of buffers, and reporting to ensure compliance (Section 5.2.2.2).
Policy OS-F.2 The County shall require developers to use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation	Yes. The proposed project would include COCs to require use of native and compatible non-native plant species to ensure compliance (Section 5.2.2.2).
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.	Yes. The proposed project does not contain significant areas of natural vegetation (Section 5.2.2.2).

TABLE 5.2-3 CONFORMANCE WITH APPLICABLE LORS

Policy OS-F.4 Landmark Trees. the County shall ensure that landmark trees are preserved and protected whenever possible.	Yes. The proposed project would include COCs to ensure that trees are preserved and protected (no landmark trees were documented onsite) to ensure compliance (Section 5.2.2.2).
Policy OS-F.5 The County will establish procedures to identify and protect rare, threatened, and endangered plants impacted by development. A qualified biologist must conduct a biological evaluation during the environmental review, including seasonal field surveys to assess plant resources. If significant impacts are found, feasible mitigation measures must be identified or justified if not possible.	Yes. The proposed project would include COCs to ensure that trees are preserved and protected (no landmark trees were documented onsite) to ensure compliance (Section 5.2.2.2).
Policy OS-F.8 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.	Yes. The proposed project would include COCs to plant suitable vegetation to ensure compliance (Section 5.2.2.2).

5.2.4 Conclusions and Recommendations

As discussed above, with implementation of conditions of certification, the project would have a less than significant impact related to biological resources and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.2.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Additional impacts associated with project components outside of the CECs jurisdiction, such as the PG&E Utility Switchyard and PG&E Downstream Network Upgrades to be permitted by CPUC, require mitigation to be less than significant. Staff recommends the mitigation measures as described in subsection "5.2.6 Recommended Mitigation Measures" below.

5.2.5 Proposed Conditions of Certification

The following proposed conditions of certification include both measures to mitigate environmental impacts and ensure conformance with applicable LORS.

BIO-1 Designated Biologist Selection. The project owner shall assign at least one Designated Biologist to the project (multiple personnel may be required to meet the license conditions). The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and
3. At least three years of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

For work related to Swainson's hawk and burrowing owl, these qualifications shall also apply. The Designated Biologist must meet the following minimum qualifications:

1. Knowledgeable in the biology, natural history, exclusion and/or monitoring techniques as applicable, construction and operational impact monitoring, and of the Swainson's hawk and burrowing owl as applicable and as permitted to perform duties described in this condition; and
2. Specific experience as a Designated Biologist with Swainson's hawk or burrowing owl, or both, experience implementing conditions of a CDFW Incidental Take Permit or acting as a Designated Biologist, or other experience implementing a CDFW Incidental Take Permit as a Biological Monitor.

Verification: The project owner shall submit the specified information at least 75 days prior to the start of site mobilization or construction-related ground disturbance activities. No pre-construction site mobilization or construction related activities shall commence until a Designated Biologist has been approved by the CPM.

If a Designated Biologist needs to be replaced, the specified information regarding the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

BIO-2 Designated Biologist Duties. The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and decommissioning activities. The project owner may request approval from the

CPM to terminate the Designated Biologist's function during plant operation in writing and provide justification of the request. However, the project owner shall appoint a replacement Designated Biologist at any time as directed by the CPM and will ensure the same duties are performed during closure and restoration activities.

If no Designated Biologist is available at any time during the life of the project (including operation phase) and the CPM determines that project-related actions may affect biological resources, the CPM may direct the project owner to assign a Biological Monitor or replacement Designated Biologist, for short-term or long-term monitoring and reporting. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the primary contact for the project owner and CPM. The Designated Biologist Duties shall include the following:

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resource conditions of certification;
2. Ensure that all conditions of certification are met and that all reporting standards for each condition of certification are completed and submitted to the CPM and any other regulatory agencies in compliance with specified timelines.
3. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner.
4. Be available to supervise other biological resource staff, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat.
5. Ensure that all sensitive biological resource areas are flagged, delineated, or marked, and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions.
6. Ensure monitoring activities are conducted to help minimize and fully mitigate or avoid the incidental take of Swainson's hawk and burrowing owl and to minimize disturbance of these species' habitat.
7. Notify the CPM if any unanticipated sensitive biological resources are encountered during all phases of the project. Unanticipated resources include sensitive species not addressed in the environmental document because of a perceived low potential to occur, species that are known to occur but have been proposed as a candidate for state or federal listing after the approval of the project; and common species whose range is unexpected in the project area.

8. Inspect or direct the site personnel how to inspect active construction areas where animals may have become trapped prior to construction commencing each day. Inspect or direct the site personnel how to inspect the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. If site personnel perform these inspections, then they will be trained by the Designated Biologist and the name of the personnel and date of training shall be included in a log in the Monthly Compliance Report.
9. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way. Inspect soil or spoil stockpiles and dust abatement watering for compliance with Condition of Certification **BIO-7**. Inspect erosion control materials (e.g., hay bales) to confirm weed-free certification. Inspect weed infestations and monitor eradication measures to determine success. Inspect trash receptacles, monitor site personnel compliance with trash handling, pet prohibitions, and all other WEAP components (**BIO-5**).
10. Notify the project owner and the CPM of any non-compliance with any biological resources condition of certification.
11. Notify the project owner and the CPM directly of any special-status species injury or mortality by the end of the business day.
12. Respond directly to inquiries of the CPM regarding biological resource issues by phone, email, or other correspondence within a timely manner.
13. Maintain written records of the tasks specified above and those included in the BRMIMP; Summaries of these records shall be submitted in the Monthly Compliance Reports (MCRs) and the Annual Compliance Report (ACR).
14. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits.
15. Maintain the ability to be in regular, direct communication with representatives of CDFW, USFWS, and the CPM, including notifying these agencies of dead or injured listed species and reporting special status species observations to the California Natural Diversity Database.
16. The Designated Biologist will notify the CPM of any non-compliance or special-status species injury or mortality by the end of the business day (notifications for Swainson's hawk or burrowing owl, are addressed per **BIO-10** and **BIO-12**).

Verification: The Designated Biologist shall submit in the MCRs to the CPM copies of all written reports and summaries that document construction activities that have the potential to affect biological resources. The Designated Biologist's written records will be made available for the CPM's inspection on request at any time during normal business hours. During project operation, the

Designated Biologist(s) shall submit record summaries in the ACR unless their duties cease, as approved by the CPM.

BIO-3 Biological Monitor Selection. The project owner's CPM-approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitor(s) to the CPM for approval. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

Verification: The project owner shall submit the specified information to the CPM for approval for review and comment at least 45 days prior to the start of any project-related site disturbance activities. Within 10 days of completion of training, the Designated Biologist shall submit a written statement to CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional biological monitors are needed during construction or for species specific surveys, the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

BIO-4 Designated Biologist and Biological Monitor Authority. The project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resource conditions of certification.

If required by the Designated Biologist or Biological Monitor(s), the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued.
2. Inform the project owner and the construction/operation manager when to resume activities.
3. The Designated Biologist or Biological Monitor shall notify the CPM immediately and no later than the morning following the incident, or Monday morning in the case of a weekend of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, operation, and decommissioning activities.
4. Notify the CPM if there is a halt of any activities and advise the CPM of any corrective actions that have been taken or would be instituted as a result of the work stoppage.

5. The CPM will determine if corrective action has been effective and will direct the project owner to take further corrective action as needed.
6. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.

Verification: The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance with biological resources conditions of certification or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities with the potential to adversely impact biological resources. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem within one (1) working day of initiating the corrective action.

BIO-5 Worker Environmental Awareness Program (WEAP). The project owner shall develop and implement a project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the CPM. The WEAP shall be administered to all onsite personnel who will enter the project site including but not limited to surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, and subcontractors (but excluding delivery personnel). An abbreviated WEAP (WEAP Light) can be provided to vendors who periodically enter the project site and are limited to areas such as existing access roads and or lay down areas. The WEAP Light shall also be submitted for approval from the CPM. The WEAP shall be implemented during site mobilization, vegetation clearing, construction, commissioning, operation, non-operation, and decommissioning. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist (See **BIO-1**) and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species and their habitat, is made available to all participants.
2. Identify the lead agencies, provide an overview of the conditions of certifications, other regulatory permit requirements, and applicable LORS that must be complied with and the ramifications of non-compliance which may include fines, imprisonment, work stoppages, or loss of employment depending on the violation.
3. Identify the roles of environmental staff and define communication protocols and chain of command between environmental and construction staff. Define what actions monitors can approve such as stopping work under specific circumstances, providing guidance to comply with conditions, conducting surveys, and what actions monitors cannot approve such as directing work, expanding work areas from approved limits, changing

conditions of certification requirements, or approving variances to permit conditions. Identify key field contacts and ensure that this information is posted in all break areas.

4. Provide examples of environmental signage and flagging that would be used to delineate work limits (such as for nesting bird or American badger buffers); areas for avoidance, or other protected areas, evacuation routes, and approved staging areas.
5. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes or other wildlife shall be intentionally harmed (unless posing a reasonable and immediate threat to humans).
6. Describe standard environmental commitments and best management practices that apply to the project including but not limited to: storing trash in closed receptacles and removing weekly to prevent attracting animals, capping pipes and other cavities that could be used by birds and small mammals; collecting and removing the carcasses of dead animals; limiting work to daytime hours, limiting work during periods of high rainfall, restricting smoking to designated areas; storing chemicals and fuel in designated areas; spill prevention measures; and reporting requirements.
7. Identify project vehicle speeds on paved and unpaved access roads.
8. Place special emphasis on the protection of state and federally protected species, including Swainson's hawk, burrowing owl, tricolored blackbird, San Joaquin kit fox, nesting birds, species of special concern and listed species including pictures and information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and temporary and permanent protection measures.
9. Provide information about the distribution and habitat needs of Swainson's hawk and burrowing owl, sensitivity of these species to human activities, their status pursuant to CESA including legal protection, recovery efforts, penalties for violations and project-specific protective measures (See **BIO-10** and **BIO-12**).
10. Provide an overview for all personnel of the risk of potential impacts to small mammals, birds, reptiles and amphibians from vehicle strikes on all project roads (paved and unpaved) during construction and operations, reporting requirements, and protection measures.
11. Provide an overview of potential impacts to avian and bat species from collisions with the photovoltaic (PV) panels, transmission lines, towers, and other features associated with the operations phase, reporting requirements, and protection measures.

12. Identify whom to contact if there are further comments and questions about the material discussed in the program.
13. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines. A small wallet card with key contacts and resource information shall be prepared and provided after the training. A hard hat sticker shall also be provided to each worker to demonstrate to the monitors that they have participated in the training.
14. The WEAP Light shall include a summary of the items above as they relate to the limited areas that vendors need to access such as existing access roads and/or laydown areas.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist and documented within the Monthly Compliance Reports.

Verification: At least 45 days prior to start of site mobilization the project owner shall provide to the CPM for review and approval, the draft WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. The CPM must approve the WEAP materials prior to their use. At least 10 days prior to site and related facilities mobilization, the project owner shall provide the CPM a copy of the CPM-approved final WEAP.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site mobilization the project owner shall submit the approved final WEAP and implement the training for all workers.

The WEAP shall be routinely administered within 1 week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel working at the project site. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to the CPM upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training. Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 months after the start of commercial operation.

Throughout the life of the project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within 1 week of arrival to any new construction personnel, foremen, contractors,

subcontractors, and other personnel potentially working within the project area. During Project operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.

BIO-6 Biological Resources Mitigation Implementation and Monitoring Plan.

The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts;
3. All biological resource mitigation, monitoring, and compliance measures required in other regulatory agency terms and conditions, such as those provided in the National Pollution Discharge Elimination System (NPDES), and the Helicopter Use Plan;
4. A discussion of all sensitive biological resources that could be impacted by project site mobilization, construction, operation, and decommissioning;
5. A detailed description of measures that shall be taken to avoid or mitigate impacts on each special-status species potentially impacted by construction and operation;
6. All locations on a map, at an approved scale, of special-status biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction and operation;
7. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction; Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after whole acreages and a determination of whether more or less habitat compensation is necessary;
8. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
9. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
10. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
11. All performance standards and remedial measures to be implemented if performance standards are not met;

12. A discussion of biological resources-related facility closure measures including a description of funding mechanism(s);
13. A process for proposing plan modifications to the CPM for review and approval; and
14. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site during construction and operation, or during project surveys, to the California Natural Diversity Database (CNDDB) per CDFW requirements.

Verification: The project owner shall submit the BRMIMP to the CPM for review and approval at least 60 days prior to start of any site mobilization. The project owner shall provide final BRMIMP to the CPM at least 10 days prior to start of any site mobilization.

If there are any permits that have not yet been received when the BRMIMP is first submitted, copies of these permits shall be submitted to the CPM within 5 days of their receipt, and a revised BRMIMP shall be submitted to the CPM for review within 10 days of receipt of permits by the project owner. Any changes to the approved BRMIMP shall be submitted to the CPM at least 10 days prior to implementation and must be approved by the CPM prior to implementation.

Implementation of BRMIMP measures shall be reported in the MCRs (e.g., survey results, construction activities that were monitored, non-compliance incidences and resolution, species observed, etc.). Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed, a summary of all CPM-approved modifications to mitigation measures made during the project's pre-construction site mobilization and construction, and which items are still outstanding.

BIO-7 General Impact Avoidance and Minimization Measures. The project owner shall ensure implementation of the following measures during site mobilization, construction, operation, and decommissioning to manage their project site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Limit Disturbance Areas. The boundaries of all areas to be temporarily or permanently disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to any site mobilization, vegetation clearing, ground disturbance, or construction activities in consultation with the Designated Biologist. Spoils shall be stockpiled 50-feet away from drainages and stabilized to ensure sediment laden water does not enter any waterway or drainage. Parking areas, staging and disposal site locations shall similarly be located in areas

without native vegetation or special-status species habitat. All disturbances, vehicles, and equipment shall be confined to the flagged areas.

2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.
3. Minimize Traffic Impacts. Vehicular traffic during project site mobilization, construction and operation shall be confined to existing routes of travel to and from the project site, and cross-country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour on paved or stabilized unpaved roads within the project area, on maintenance roads for linear facilities, or on access roads to the project site. No vehicle shall exceed 10 miles per hour on unpaved areas within the project site, except on stabilized unpaved roads. Project vehicles shall abide by posted speed limits on public paved access roads outside the project site.
4. Inspect Pipes and Trenches. At the end of each workday, the Designated Biologist, Biological Monitor, and/or site personnel (approved and trained by the Designated Biologist) shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If site personnel are inspecting trenches, bores, and other excavations and wildlife is trapped, they will immediately notify the Designated Biologist and/or Biological Monitor. If backfilling is not feasible, all trenches, bores, and other excavations shall be covered to prevent wildlife entrapment or sloped at a 3:1 ratio at the ends to provide wildlife escape ramps. Should wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the animal to a safe location. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed;
5. Prevent Wildlife Entrapment. Any construction pipe, culvert, or similar structure with a diameter greater than three inches, stored less than eight inches aboveground for one or more nights, would be inspected for wildlife before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks, in compliance with **BIO-12**.
6. Relocate Wildlife. The Designated Biologist or Biological Monitor shall salvage or relocate sensitive wildlife during ground disturbance activities including clearing, grubbing, and grading operations when feasible to off-

site habitat or out of harm's way. The species shall be salvaged or relocated when conditions will not jeopardize the health and safety of the monitor;

7. Minimize Lighting Impacts. To minimize adverse effects of artificial light on wildlife, exterior lighting fixtures used during project construction shall be downward facing, fully shielded, and designed and installed to minimize backscatter, reflection, minimize skyward illumination, minimize spillover onto adjacent wildlife habitat. Night lighting shall be limited to the lowest illumination necessary for human safety. Lights used shall be lower on the light spectrum (lower Kelvins with fewer short-wavelength blue light emissions).

Permanent light fixtures on project infrastructure for use during operation shall be installed only where necessary for personnel safety. Facility lighting shall be designed, installed, and maintained to minimize light spill into wildlife habitats and sensitive resource areas. Lighting shall be kept to the minimum necessary for safety and security by using motion or infrared sensors and switches to ensure lights remain off when not needed. Operational lights must be shielded downward to reduce skyward illumination. High-intensity, steady-burning, or bright lights—such as sodium vapor lamps or spotlights—shall not be used. Aviation lighting shall be designed to be as wildlife-friendly as possible while complying with FAA regulations.

8. Use Non-toxic Soil Binders. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants and shall be approved by the CPM prior to use;
9. Minimize Impacts from Pest Control. Anticoagulants shall not be used for rodent control. Pre-emergent and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife-safe use of herbicides in **BIO-9** (Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan);
10. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract predators of special-status species to construction sites. During construction, site personnel shall patrol these areas to ensure water does not puddle and attract crows and ravens and other wildlife to the site, and shall take appropriate action to reduce water application rates where necessary;
11. Handling of Road-killed Animals. Report all inadvertent deaths of special-status species to the appropriate project representative, including roadkill. Species name, physical characteristics of the animal (sex, age class, length,

weight), and other pertinent information shall be noted and reported in the Monthly Compliance Reports. For special-status species, the Designated Biologist or Biological Monitor shall contact the CPM, CDFW and USFWS within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. During construction, injured or dead animals detected by personnel in the project area shall be reported immediately to a Biological Monitor or Designated Biologist, who shall remove the carcass or injured animal promptly. During operations, the Project Environmental Compliance Monitor shall be notified, and they shall contact the Biological Monitor or Designated Biologist for further instructions. The veterinary fees for the treatment of injured wildlife shall be covered by the project owner for project-related injuries or found injured on the project site.

12. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials or wastes. The Designated Biologist shall be informed immediately of any hazardous spills. Any on-site servicing of vehicles or construction equipment shall take place only at a designated area approved by the Designated Biologist. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills;
13. Remove Trash Weekly. During construction all trash and food-related waste shall be placed in self-closing containers and removed weekly or more frequently from the site.
14. No Feeding Wildlife or Pets On-Site. Workers shall not feed wildlife or bring pets to the project site.
15. No Firearms. Except for law enforcement or security personnel, no workers or visitors to the site shall bring firearms or weapons to the project site;
16. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants;
17. Minimize Disturbance Areas. Limit the size of any vegetation and/or ground disturbance to the minimum area needed for safe completion of project activities, and limit ingress and egress to defined routes;
18. Weed and Monofilament Free Wattles. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations. Monofilament plastic will not be used for erosion control. In addition, invasive non-native species shall not be used in landscaping plans and erosion control. Monitor and rapidly implement control measures to ensure early detection and eradication of weed invasions;
19. Minimizing Impacts of Generation Tie-Line Alignment. Construction staging areas for the generation intertie line (gen-tie) shall be confined within delineated project boundaries. Impacts to aquatic resources shall be

avoided and impacts to sensitive biological resources shall be avoided, to the extent feasible, by adjusting the placement of poles, laydown areas, and road alignments. Construction drawings and grading plans shall identify sensitive resource locations and clearly indicate areas where temporary impacts can and cannot be avoided.

20. Conform to APLIC Guidelines. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) *Suggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Reducing Avian Collisions with Power Lines* (APLIC 2012) to reduce the likelihood of large bird electrocutions and collisions;
21. Aviation Lighting. To the extent feasible, any aviation warning lighting shall employ only strobed, strobe-like or blinking incandescent or LED lights, preferably with all lights illuminating simultaneously. Minimum intensity, maximum "off-phased" dual strobes are preferred, and no steady burning lights (e.g., L-810s) shall be used;
22. Herbicide Use. During construction and operation, the project owner shall conduct pesticide management in accordance with standard BMPs. The BMPs shall include non-point source pollution control measures. The project owner shall use a licensed herbicide applicator and obtain recommendations for herbicide use from a licensed Pest Control Advisor. Herbicide applications must follow EPA label instructions. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to non-target plants and wildlife. The project owner shall only use pesticides for which a "no effect" determination has been issued by the EPA's Endangered Species Protection Program for any species likely to occur within the project area or adjacent wetlands.
23. Minimize Stormwater Impacts. Standard best management practices (BMPs) from the project Storm Water Pollution Prevention Plan shall be implemented during all phases of the project (construction, operation, and decommissioning) where storm water run-off from the site could enter adjacent drainages. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the jurisdictional waters. All disturbed soils within the project site shall be stabilized to reduce erosion potential, both during and following construction.
24. Minimize Noise Impacts. Loud construction activities (e.g., pile driving or other high-impact noise sources exceeding 60 dB(A) at active nest sites) shall be avoided during nesting season from February 1 to August 31 to the extent possible. The Designated Biologist(s) or Biological Monitor(s) shall monitor active nests within the range of construction-related noise in accordance with **BIO-8**. If noise levels exceed 60 dB(A) at an active nest,

additional mitigation measures (e.g., noise barriers, modified work hours) shall be implemented to minimize disturbance, per **BIO-8**. The BRMIMP (**BIO-6**) shall outline adaptive management actions, including halting construction if the Designated Biologist determines it is causing disturbance. Triggers for adaptive management include evidence of project-related disturbance to nesting birds, such as agitation behavior (displacement, avoidance, or defense), increased vigilance at nest sites, altered foraging or feeding behavior, or nest abandonment.

25. Bird-Safe/Bat-Safe Photovoltaic (PV) Panels. Photovoltaic (PV) panels installed on the project site shall, if feasible, include a light-colored, ultraviolet (UV)-reflective, or otherwise non-polarizing outline, frame, grid, or border. These features have been shown to significantly reduce the attraction of aquatic insects to panel surfaces, thereby decreasing the likelihood of attracting insectivorous birds and/or bats. This measure aims to mitigate avian and bat mortality by minimizing collisions with panel faces.

Verification: All general impact avoidance and minimization measures shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported by the Designated Biologist in the MCRs. Within 60 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

BIO-8 Nesting Bird Avoidance and Minimization Measure and Tricolored Blackbird Avoidance and Minimization Measures. The project owner shall develop and implement a Nesting Bird Management Plan (NBMP) and submit to the CPM for approval, in coordination with CDFW and USFWS. The NBMP shall describe methods, included in **BIO-8**, to minimize potential project effects to nesting birds and avoid any potential for unauthorized take for tricolored blackbird, or other listed species without incidental take authorization. Where scheduling allows, the project owner shall clear or remove any vegetation, conduct site preparation in open or barren areas, or other project-related activities that may adversely affect breeding birds outside the nesting season. The NBMP will be applicable throughout the nesting season.

Pre-construction nest surveys shall be conducted if pre-construction site mobilization or construction shall initiate during the breeding season, from February 1 through September 15. The Designated Biologist and/or Biological Monitor shall perform surveys in accordance with the following guidelines:

1. Survey Requirements. Surveys shall cover all potential nesting substrate within the project site and areas surrounding the project site within 500 feet of the project boundary.
2. Survey Schedules. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. Pre-construction surveys shall be

conducted no more than 14 days prior to initiation of construction activity. One survey needs to be conducted within the 3-day period preceding initiation of site mobilization, vegetation removal, ground disturbance, or construction activity.

Surveys may be conducted in phases aligned with the phased construction approach, ensuring each area is surveyed, as required, prior to site mobilization or construction activities. Surveys shall be repeated throughout construction to ensure that birds are not nesting on equipment or have moved into an area after the initial vegetation clearance or ground disturbance has been completed. The NBMP shall include a survey schedule and a map of the project site that identifies each area to be surveyed for each phase. Any updates to the survey schedule and maps shall be provided to the CPM.

3. Nest and Avian Monitoring and Surveys During Construction. Additional follow-up surveys shall be required if periods of construction inactivity exceed three weeks during February 1 through September 15 in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.

4. Nest Detection. If active nests are detected during the survey, a no-disturbance buffer zone (protected area surrounding the nest) shall be established around each nest.

Specific buffer distances will be described and approved by the CPM in the NBMP; these buffers may be modified with the CPM's approval. For special-status species, if an active nest is identified, the size of each buffer zone shall be determined by the Designated Biologist in consultation with the CPM or as described in COCs specific for those species. Nest locations shall be mapped using GPS technology.

5. Active Nest Protection. If active nests are detected during the survey, the Designated Biologist or Biological Monitor shall monitor all nests with buffers at least once per week, to determine whether birds are being disturbed. If signs of disturbance or distress are observed, the Designated Biologist or Biological Monitor shall immediately implement adaptive measures to reduce disturbance in coordination with the CPM. These measures could include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, or placement of visual screens or sound dampening structures between the nest and construction activity, based on coordination with the CPM.

The Designated Biologist or Biological Monitor shall monitor the nest until it is determined that nestlings have fledged and dispersed, or the nest is no longer active. Activities that might, in the opinion of the Designated Biologist or Biological Monitor, disturb nesting activities (e.g., exposure to exhaust), shall be prohibited within the buffer zone until such a

determination is made. Any nest buffer reduction would require full time monitoring if reduced from the levels identified in the approved NBMP.

6. NBMP Content. The NBMP shall include:

- a. Definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species and the nature of planned project activities in the vicinity.
- b. A notification procedure for buffer distance reductions should they become necessary.
- c. A pre-construction survey protocol (surveys no longer than 3 days prior to starting work activity at any site).
- d. A monitoring protocol, to be implemented until adjacent construction activities are completed or the nest is no longer active, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds will be minimized.
- e. A protocol for documenting and reporting any inadvertent contact with or effects to birds or nests.
- f. A survey schedule and a map of the project site that identifies each area to be surveyed for each phase.
- g. Specify the responsibilities of construction workers and site personnel with regard to nests and nest issues and specify a direct communication protocol to the Biological Monitor and/or Designated Biologist;
- h. Specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options;
- i. Specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval process.

7. Nest Deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities such as securing of materials netting of materials, vehicles, and equipment.

It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals.

In the event that an active nest is located on project facilities, materials or equipment, the project owner shall avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

8. Nest Start Removal. Prior to removing any suitable nesting habitat, pre-construction nesting bird surveys shall inform as to where existing raptor nests, and other special status bird nests, occur throughout the project area. The locations of existing special status bird nests within the habitat removal footprint shall be recorded and mapped by a qualified biologist.

Due to the potential for nest building during active construction, the Designate Biologist and/or Biological Monitor shall regularly inspect for nest building attempts that may occur on/within construction equipment and/or within an area of active construction disturbance. In the event nest building is detected, the biologist shall deter birds from nesting using non-invasive methods to modify the circumstances. Methods may include, but are not limited to, removal of attempted nesting starts, visual deterrents, like reflective materials and/or physical barriers, based on coordination with the CPM.

In the event a nest is built, and eggs are laid, the nest shall be considered active nest and shall be avoided. This may include placing a buffer around a piece of equipment or closing off a work area until the nest has fledged. Nest start removal shall not be employed for state or federally-listed special-status species.

9. Accidental Nest Disturbance. The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. The project owner shall identify an appropriate wildlife care facility before starting site mobilization. The location of the care facility shall be provided to the CPM prior to site mobilization. The project owner shall bear any costs associated with the care or treatment of project related injured birds. The project owner shall provide a letter report detailing the outcome of the care to the CPM.
10. Reporting. Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter routes), and any adjustments to buffer areas shall be updated and available to the CPM upon request. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to the CPM. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, the project owner shall submit an annual NBMP report to the CPM. Specific contents and format of the annual report will be reviewed and approved by the CPM. Monthly reporting shall be included in the Monthly Compliance Report.
11. Tricolored Blackbird Specific Avoidance Measures.
- a. If construction activities take place during the tricolored blackbird breeding season (February 1 through September 15), the Designated Biologist, or Biological Monitor, shall conduct focused surveys for nesting

tricolored blackbird within the project site and within 500 feet of the project boundary, where legally or safely accessible. If access is not available, surveys shall be conducted from public roads using binoculars or spotting scopes to assess potential nesting activity. Surveyors must have prior experience surveying for tricolored blackbirds to ensure accurate identification.

- b. Surveys shall occur within or near areas that have suitable nesting habitat for tricolored blackbird, including freshwater wetlands, cattail/bulrush stands, flooded areas, blackberry or other vegetation thickets, and agricultural grain field. Survey shall occur within 10 days prior to the start of site mobilization or ground-disturbing construction activities. These areas shall be identified on a map and included in the NBMP.
- c. If an active tricolored blackbird nesting colony is detected during pre-construction surveys, a minimum 300-foot no-disturbance buffer shall be established by the Designated Biologist, per CDFW's Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015 (CDFW 2015) or more recent guidance. This buffer shall remain in place until the breeding season ends or the Designated Biologist confirms that nesting has ceased, nestlings have fledged, and are no longer dependent on the colony or parental care for survival.
- d. If an active tricolored blackbird nesting colony is detected, daily monitoring shall be conducted by the Designated Biologist or Biological Monitor until it is determined that the nestlings have successfully fledged.
- e. If an active tricolored blackbird nesting colony is detected, a Nesting Tricolored Blackbird Monitoring Report shall be prepared by the Designated Biologist and submitted to the CPM. The Nesting Tricolored Blackbird Monitoring Report shall contain at a minimum: nest locations; project activities in the vicinity of nests; any adjustments to buffer areas; and any other pertinent information or anecdotal observations. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to the CPM within 24 hours or the Monday following a weekend event.

Verification: The project owner shall submit the NBMP to the CPM at least 30 days prior to start of site mobilization activities. The project owner shall submit pre-construction survey reports to the CPM no more than 30 days after each survey effort has been completed. The project owner shall submit reports in the MCR during nesting season, and an annual NBMP report to the CPM within 60 days of the end of nesting season. The project owner shall provide a letter report detailing the outcome of the care of any special-status injured birds or nest

failures to the CPM within 14 days of the incident. If nesting tricolored blackbird are detected, the project owner shall submit the Nesting Tricolored Blackbird Monitoring Report bi-monthly to the CPM.

BIO-9 Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan.

To mitigate for the loss of Swainson's hawk foraging habitat, the project owner shall revegetate and manage on-site vegetation throughout the life of the project in lieu of purchasing offsite compensation lands. The project owner shall submit a Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan to the CPM for review and approval prior to ground disturbance, including pre-construction site mobilization. Revegetation shall be initiated during construction and continue through operation. The plan shall detail the revegetation and long-term management actions necessary to establish and maintain suitable foraging habitat. The two plans included in Items 1 and 2, shall form the Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan.

1. Swainson's Hawk Conservation Strategy. The project shall prepare and implement a Swainson's Hawk Conservation Strategy for the project. The draft Swainson's Hawk Conservation Strategy submitted by the Applicant (RCI 2023hh) shall be submitted for review and revisions and approval from the CPM, in consultation with CDFW. The final plan shall be at least as stringent as the draft Swainson's Hawk Conservation Strategy and approved by the CPM.
2. Foraging Habitat Revegetation and Management Plan. The Project owner shall prepare and implement a Foraging Habitat Revegetation and Management Plan. The draft Vegetation and Management Plan submitted by the Applicant as Appendix D to the Swainson's Hawk Conservation Strategy (RCI 2023hh) shall be submitted for review and revisions and approval from the CPM, in consultation with CDFW. The final plan shall be at least as stringent as the draft Vegetation Management Plan (Appendix D of the draft Swainson's Hawk Conservation Strategy) and approved by the CPM.
3. Success Criteria. The success criteria for the Swainson's Hawk Conservation Strategy and the Foraging Habitat Revegetation and Management Plan shall be established to ensure the effective restoration and maintenance of suitable habitat. The success criteria shall be included in the Swainson's Hawk Conservation Strategy and the Foraging Habitat Revegetation and Management Plan and shall be at least as stringent as those included by the Applicant in the draft Vegetation Management Plan and draft Conservation Strategy (See Item 1 and 2) above. These include the success criteria for the following: nesting tree survivorship, vegetative cover, invasive species

control, and Swainson's hawk habitat use or similar success criteria as approved by the CPM.

4. Reporting. The project owner shall provide annual monitoring reports to the CPM to demonstrate progress toward successful habitat establishment. The reports shall be prepared in coordination with the Designated Biologist. Specific contents and format of the annual report will be reviewed and approved by the CPM. Reporting shall begin upon initiation of pre-construction site mobilization for the previous calendar year and submitted to the CPM. The annual monitoring report shall cover a calendar year.
5. Security Release: If the success criteria are met, after 5 years of post-construction monitoring, the project owner shall submit a request (in letter or email format) to the CPM for the release of the Security deposit required by **BIO-11**. The documentation that the success criteria have been met shall be included in the annual monitoring report for Year 5, after the start of operation. The CPM shall release the Security upon confirmation that the success criteria have been met based on review of the annual report. The release of the Security shall not be approved until the requirements of **BIO-11**, Item 1 have also been satisfied.
6. Compensation Lands. If after 5 years of monitoring from start of operation, or alternative date approved by the CPM based on Section 7, below, the success criteria have not been met and the revegetation and management efforts are determined by the CPM, in consultation with CDFW, to be unsuccessful in achieving functional foraging habitat for Swainson's hawk, then the project owner shall acquire and protect off site compensation lands. The compensation lands shall be for 2,336 acres as specified in **BIO-11**. The acquisition of compensation lands shall follow the requirements outlined in BIO-13, subsection 1.3. If compensation lands are purchased, the project owner shall follow the requirements outlined in **BIO-11**, Subsection 2.7. for release of the Security
7. Remedial Actions. The project owner may request an extension of time to meet the success criteria if environmental factors, such as drought conditions, unforeseen ecological challenges, or other relevant constraints, impede the successful establishment of functional foraging habitat. The extension request shall be submitted to the CPM and must include supporting data demonstrating the need for additional time to meet the success criteria. The request shall be reviewed by the CPM, in consultation with CDFW, and approved as appropriate.

Verification: No fewer than 60 days prior to the start of pre-construction site mobilization the project owner shall submit to the CPM, for review and approval, a draft Swainson's Hawk Conservation Strategy and a draft Foraging Habitat Revegetation and Management Plan to be included the Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and

Management Plan (Plan). The Plan shall be finalized prior to the start of ground disturbance. The project owner shall submit the annual monitoring reports to the CPM for review within 30 days after the end of each reporting period.

BIO-10 Swainson's Hawk Impact Avoidance, Minimization, and Mitigation Measures for Take. To avoid, minimize, and mitigate take of the Swainson's hawk, the project owner shall perform the following:

1. Swainson's Hawk Nest Survey Methodology. The Designated Biologist(s) experienced in Swainson's hawk identification and behavior shall conduct Swainson's hawk preconstruction surveys during the nesting season (February 15 through September 15) at and within 0.5 mile of the project area and determine the status of any identified nests. The Designated Biologist shall report any active Swainson's hawk nest sites to the CPM within 24 hours. Post-construction annual surveys shall also be conducted according to the final Swainson's Hawk Conservation Strategy approved pursuant to **BIO-9**.
2. Swainson's Hawk Nest Abandonment Contingency Plan. The Designated Biologist shall prepare and implement a Swainson's Hawk Nest Abandonment Contingency Plan. The plan shall include, but not be limited to, identification of capture methods, handling methods, methods to return Swainson's hawk back into the wild, and the identification of a CPM-approved wildlife rehabilitation center or veterinary facility. The project owner shall fund the recovery and hacking (controlled release) of the Swainson's hawk nestlings. Once the Swainson's hawk Nest Abandonment Contingency Plan is approved in writing by the CPM, it shall be used for the duration of the licensed project unless updated by the CPM to reflect best available science, in which case the CPM will contact the project owner to discuss needed updates. Any proposed changes to the Swainson's Hawk Nest Abandonment Contingency Plan shall be submitted, in writing, to the CPM and approved in writing prior to implementation of any proposed modifications.
3. Swainson's Hawk Nest(s). If a nesting Swainson's hawk is located at or within 0.25-mile of a distinct work area(s) within the Project Area, the Designated Biologist(s) shall be present daily for the entire duration of any project activities occurring during the nesting season (February 15 through September 15) and within 0.25-mile of the active nest, to monitor the behavior of the potentially affected SWHA. The Designated Biologist(s) shall have the authority to order the cessation of all project activities (e.g. pre-construction site mobilization, construction, or operation) if the bird(s) exhibits distress and/or abnormal nesting behavior (swooping/stooping, excessive vocalization [distress calls], agitation, failure to remain on nest, failure to deliver prey items for an extended time period, failure to maintain nest, etc.) which may cause reproductive failure (nest abandonment and

loss of eggs and/or young). The project owner shall not resume project activities until the Designated Biologist(s) confirm that the bird's behavior has normalized, and the CPM provides agreement by email or telephone.

4. Swainson's Hawk Nest Buffers. The project owner and Designated Biologist(s) shall ensure that no project activities occur within 100 feet of a Swainson's hawk nest during the nesting season (February 15 through September 15). The 100-foot no disturbance buffer shall not be reduced or otherwise modified without prior written CPM approval. Worker foot traffic, water and restroom facilities, employee break areas (permanent or temporary), and worker vehicle parking is prohibited within 1,000 feet of any Swainson's hawk nest without prior written CPM approval.
5. Swainson's Hawk Injury. If a Swainson's hawk is injured as a result of project related activities, the Designated Biologist(s) shall immediately take it to a CPM approved wildlife rehabilitation or veterinary facility. The project owner shall identify the facility and shall bear any costs associated with the care or treatment of such injured Swainson's hawk. The project owner shall notify the CPM of the injury to the Swainson's hawk immediately by telephone and e-mail followed by a written incident report as described in Section 10 below. Notification shall include the name of the facility where the animal was taken. The Designated Biologist(s) shall respond directly to CPM inquiries.
6. Final Construction Phase Report. No later than 45 days after completion of all construction activities, including all required monitoring, the project owner shall provide the CPM with a Final Construction Phase Report. The Designated Biologist shall prepare the Final Construction Phase Report which shall include, at a minimum: (1) a summary of all Monthly Compliance Reports during the construction phase; (2) all available information about project-related incidental take of the Swainson's hawk during construction; (3) information about other project impacts on the Swainson's hawk and burrowing owl; (4) beginning and ending dates of construction activities, including pre-construction site mobilization; (5) an assessment of the effectiveness of this condition of certification in minimizing and fully mitigating Project impacts of the taking on Swainson's hawk; (6) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Swainson's hawk; and (7) any other pertinent information. This report shall be included as part of the written construction termination report required under **BIO-7**.
7. Swainson's Hawk Nest Avoidance During Operation. Unless otherwise approved by CPM, the Designated Biologist(s) shall establish a 100-foot no disturbance buffer around all active SWHA nest(s) during the nesting season (February 15 through September 15). The 100-foot no disturbance buffer shall not be reduced or otherwise modified without prior written CPM

approval. Worker foot traffic, water and restroom facilities, employee break areas (permanent or temporary), and worker vehicle parking is prohibited within 1,000 feet of any Swainson's hawk nest without prior written CPM approval. If an active nest is abandoned or a Swainson's hawk is injured, the Designated Biologist(s) shall follow the CPM approved Swainson's Hawk Nest Abandonment Contingency Plan (**BIO-10**, Item 2) and Condition of Certification **BIO-10**, Item 5 (Swainson's Hawk Injury) as applicable.

8. Helicopter Use Along the Gen-Tie Line. During the Swainson's hawk nesting season (February 15 through September 15), the project owner shall implement at a minimum the following buffers during helicopter activities: as described in Table 1 a vertical and horizontal buffer distance of at least 1,320 feet shall be maintained from a Swainson's hawk nest, and shall be adjusted according to the approved Designated Biologist(s) specifications (**BIO-1** and **BIO-2**).

TABLE 1 HELICOPTER AVOIDANCE BUFFER GUIDELINES

Species	Vertical and Horizontal Buffer Distance (feet)*
Swainson's Hawk	1,320
Fully Protected Avian Species	1,320
Special Status Raptors**	1,200
Common Raptors	300
Special-status Passerines	300
Common Passerines	200

Notes: *These distances are applicable to small helicopters, which typically cause a downdraft of 15 to 18 miles per hour at up to 150 feet, operating in nest vicinity for up to 3 minutes once or twice per day, with a minimum of 4 hours between helicopter activities. Buffers will be re-evaluated and adjusted for larger helicopters or longer work periods.

Helicopter Use Buffers for burrowing owl should reflect **BIO-12 buffer distances of 1,200 feet.

9. Vehicle Parking During Operation. During operation, the project owner shall not allow vehicles to park within 100 feet of an active Swainson's hawk nest. Vehicles left overnight shall not be located within 100 feet of an active Swainson's hawk nest.
10. Notification of Observation, Take or Injury. The project owner shall notify the Designated Biologist by the end of the business day if a Swainson's hawk is observed within or near the project site or taken or injured by a project-related activity, or if a Swainson's hawk is otherwise found dead or injured within the vicinity of the project. Swainson's hawk observations (other than take or injury) must only be reported pursuant to this condition if an active nest is observed. The initial notification to CPM shall include information regarding the location, species, and number of animals

observed, taken or injured. If the take or injury is a result of project activities then following initial notification, the project owner shall send (email) CPM a written report within two calendar days of the discovery. The report shall include the date and time of the finding or incident, GPS location of the Swainson's hawk, photographs and maps of the location and the Swainson's hawk, explanation as to cause of take or injury, and any other pertinent information. The Designated Biologist(s) shall respond directly to CPM inquiries.

Verification: The project owner shall provide the preconstruction survey results to the CPM in a written report at least five (5) days prior to beginning pre-construction site mobilization. A Swainson's Hawk Nest Survey Report shall be submitted to the CPM on an annual basis. The Designated Biologist shall prepare a Swainson's hawk Nest Abandonment Contingency Plan and submit it to the CPM for written approval at least 45 days prior to the start of pre-construction site mobilization.

BIO-11 Swainson's Hawk Conservation Easement and Revegetation

Security. To mitigate for impacts to Swainson's hawk the project owner shall fulfill the following requirements:

- a. Perpetual Tree Protection. Perpetual Tree Protection shall be in the form of a conservation easement or other similar perpetual instrument approved by CPM, in accordance with the Habitat Management Lands Acquisition Subsection below or other similar perpetual protection approved by CPM. This Perpetual Tree Protection shall not be in the form of a deed restriction or zoning change given the ease with which those instruments can be modified or terminated. The area covered by the Perpetual Tree Protection shall be all known and potential nesting trees identified in 2023 surveys, in addition to all trees planted as part of the Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan (**BIO-9**), plus a minimum 50-foot buffer from the existing outer tree dripline, or in the case of planted trees, the projected outer tree dripline once the planted tree species reaches maximum growth. Tree trimming or removal shall be allowed only following a tree hazard determination by a certified arborist and approved by the CPM. Tree removal shall be allowed only with the installation of replacement trees in accordance with the Swainson's Hawk Conservation Strategy and the Vegetation Management Plan. The Perpetual Tree Protection shall be recorded no more than 24 months after the start of pre-construction site mobilization.
- b. Security. The project owner shall provide financial security pursuant to subsection 2 below sufficient to provide for both the permanent protection and management of 2,336 acres of Habitat Management (HM) lands pursuant to subsection 1.3 below and the calculation and deposit of the

management funds pursuant to subsection 1.4 below. Financial Security shall be determined and provided pursuant to subsections below prior to the start of pre-construction mobilization. No pre-construction site mobilization shall begin until the Security has been provided to the CPM.

- 1.1. Cost Estimates. The Security amount, estimated to be sufficient for CPM or contractors to complete acquisition, protection, and perpetual management of the off-site compensation lands and restoration of temporarily disturbed habitat is as follows:
 - 1.1.1. Land acquisition costs for HM lands identified in subsection 1.3 below, estimated at \$2318/acre for 2,336 acres: \$5,414,848. Land acquisition costs are estimated using local fair market current value per acre for lands with habitat values meeting mitigation requirements;
 - 1.1.2. All other costs necessary to review and acquire the land in fee title and record a conservation easement as described in subsections 1.3.1 and 1.3.2 below: \$423,600;
 - 1.1.3. Start-up costs for HM lands, including initial site protection and enhancement costs as described in subsection 1.3.6 below, estimated at \$142,384;
 - 1.1.4. Interim management period funding as described in subsection 1.3.7 below, estimated at \$485,581;
 - 1.1.5 Long-term management funding as described in subsection 1.4 below, estimated at \$1,332.79/acre for 2,336 acres: \$1,527,195.
 - 1.1.6. Related transaction fees including but not limited to account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW as described in subsection 1.5, estimated at \$12,000.
 - 1.1.7. All costs associated with the CPM or CDFW engaging an outside contractor to complete the mitigation tasks, including but not limited to acquisition, protection, and perpetual funding and management of the HM lands and restoration of temporarily disturbed habitat. These costs include but are not limited to the cost of issuing a request for proposals, transaction costs, contract administration costs, and costs associated with monitoring the contractor's work \$42,000.

- 1.2. Habitat Management Lands Acquisition and Protection. If the project owner does not meet the success criteria per **BIO-9** or elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall:
 - 1.2.1. Fee Title. Transfer fee title of the HM lands to CDFW pursuant to terms approved in writing by CPM. Alternatively, CPM, in consultation with CDFW, may authorize a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended.
 - 1.2.2. Conservation Easement. If CDFW does not hold fee title to the HM lands, CDFW shall act as grantee for a conservation easement over the HM lands or shall, in the CPM's discretion, in consultation with CDFW, approve a non-profit entity, public agency, or Native American tribe to act as grantee for a conservation easement over the HM lands provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If CDFW elects not to be named as the grantee for the conservation easement, CDFW shall be expressly named in the conservation easement as a third-party beneficiary. The project owner shall obtain CPM written approval of any conservation easement before its execution or recordation. No conservation easement shall be approved by the CPM unless it complies with Civil Code sections 815-816, as amended, and Government Code sections 65965-65968, as amended and includes provisions expressly addressing Government Code sections 65966(j) and 65967(e). Because the "doctrine of merger" could invalidate the conservation interest, under no circumstances can the fee title owner of the HM lands serve as grantee for the conservation easement.
 - 1.2.3. HM Lands Approval. Obtain the CPM's written approval of the HM lands before acquisition and/or transfer of the land by submitting, at least three months before acquisition and/or transfer of the HM lands, documentation identifying the land to be purchased or property interest conveyed to an approved entity as mitigation for the project's impacts on Swainson's hawk;

- 1.2.4. HM Lands Documentation. Provide a recent preliminary title report, Phase I Environmental Site Assessment, and other necessary documents (please contact the CPM for document list). All documents conveying the HM lands and all conditions of title are subject to the approval of the CPM, in consultation with CDFW, and if applicable, the Wildlife Conservation Board and the Department of General Services;
- 1.2.5. Land Manager. Designate both an interim and long-term land manager approved by the CPM. The interim and long-term land managers may, but need not, be the same. The interim and/or long-term land managers may be the landowner or another party. The land manager shall prepare a draft management plan for the CPM's review and written approval as part of the HM lands acquisition process. The project owner shall notify the CPM of any subsequent changes in the land manager within 30 days of the change. If CDFW will hold fee title to the mitigation land, CDFW will also act as both the interim and long-term land manager unless otherwise specified. The grantee for the conservation easement cannot serve as the interim or long-term manager without the express written authorization of the CPM in consultation with CDFW.
- 1.2.6. Start-up Activities. Provide for the implementation of start-up activities, including the initial site protection and enhancement of HM lands, once the HM lands have been approved by the CPM. Start-up activities include, at a minimum: (1) conducting a baseline biological assessment and land survey report within four months of recording or transfer; (2) developing and transferring Geographic Information Systems (GIS) data if applicable; (3) establishing initial fencing; (4) conducting litter removal; (5) conducting initial habitat restoration or enhancement, if applicable; and (6) installing signage;
- 1.2.7. Interim Management (Initial and Capital). Provide for the interim management of the HM lands. The project owner shall ensure that the interim land manager implements the interim management of the HM lands as described in the final management plan and conservation easement approved by CPM. The interim management period shall be a minimum of three years from the date of HM land acquisition and protection and full funding of the

Endowment and includes expected management following start-up activities. Interim management period activities described in the final management plan shall include fence repair, continuing trash removal, site monitoring, and vegetation and invasive species management.

The project owner shall either (1) provide Security to CPM for the minimum of three years of interim management that the land owner, project owner, or land manager agrees to manage and pay for at their own expense, (2) establish an escrow account with written instructions approved in advance in writing by CPM to pay the land manager annually in advance, or (3) establish a short-term enhancement account with CPM or a CPM-approved entity for payment to the land manager.

- 1.3. Endowment Fund. If the project owner elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall ensure that the HM lands are perpetually managed, maintained, and monitored by the long-term land manager as described in this condition, the conservation easement, and the final management plan approved by CPM. After obtaining CPM approval of the HM lands, Permittee shall provide long-term management funding for the perpetual management of the HM lands by establishing a long-term management fund (Endowment). The Endowment is a sum of money, held in a CPM-approved fund that is permanently restricted to paying the costs of long-term management and stewardship of the mitigation property for which the funds were set aside, which costs include the perpetual management, maintenance, monitoring, and other activities on the HM lands consistent with this condition, the conservation easement, and the management plan required by subsection 1.2.5.

Endowment as used in this condition shall refer to the endowment deposit and all interest, dividends, other earnings, additions and appreciation thereon. The Endowment shall be governed by this condition, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

After the interim management period, project owner shall ensure that the designated long-term land manager implements

the management and monitoring of the HM lands according to the final management plan. The long-term land manager shall be obligated to manage and monitor the HM lands in perpetuity to preserve their conservation values in accordance with this ITP, the conservation easement, and the final management plan. Such activities shall be funded through the Endowment.

- 1.3.1. Identify an Endowment Manager. The Endowment shall be held by the Endowment Manager, which shall be either CDFW or another entity qualified pursuant to Government Code sections 65965-65968, as amended.

The project owner shall submit to the CPM a written proposal that includes: (i) the name of the proposed Endowment Manager; (ii) whether the proposed Endowment Manager is a governmental entity, special district, nonprofit organization, community foundation, or congressionally chartered foundation; (iii) whether the proposed Endowment Manager holds the property or an interest in the property for conservation purposes as required by Government Code section 65968(b)(1) or, in the alternative, the basis for finding that the Project qualifies for an exception pursuant to Government Code section 65968(b)(2); and (iv) a copy of the proposed Endowment Manager's certification pursuant to Government Code section 65968(e).

Within thirty days of the CPM's receipt of project owner's written proposal, the CPM shall inform the project owner in writing if it determines the proposal does not satisfy the requirements of Fish and Game Code section 2081(b)(3) and, if so, shall provide the project owner with a written explanation of the reasons for its determination. If the CPM does not provide the project owner with a written determination within the thirty-day period, the proposal shall be deemed consistent with Section 2081(b)(3).

- 1.3.2. Calculate the Endowment Funds Deposit. After obtaining the CPM's written approval of the HM lands, long-term management plan, and Endowment Manager, the project owner shall prepare an endowment assessment (equivalent to a Property Analysis Record (PAR)) to calculate the amount of funding necessary to ensure the long-term management of the HM lands (Endowment Deposit Amount). Note that the endowment for the easement holder should not be included in this calculation. The

project owner shall submit to the CP for review and approval the results of the endowment assessment before transferring funds to the Endowment Manager.

1.3.2.1. Capitalization Rate and Fees. The project owner shall obtain the capitalization rate from the selected Endowment Manager for use in calculating the endowment assessment and adjust for any additional administrative, periodic, or annual fees.

1.3.2.2. Endowment Buffers/Assumptions. The project owner shall include in the endowment assessment assumptions the following buffers for endowment establishment and use that will substantially ensure long- term viability and security of the Endowment:

1.3.2.2.1. Ten Percent Contingency. A ten percent contingency shall be added to each endowment calculation to hedge against underestimation of the fund, unanticipated expenditures, inflation, or catastrophic events.

1.3.2.2.2. Three Years Delayed Spending. The endowment shall be established assuming spending will not occur for the first three years after full funding.

1.3.2.2.3. Non-annualized Expenses. For all large capital expenses to occur periodically but not annually such as fence replacement or well replacement, payments shall be withheld from the annual disbursement until the year of anticipated need or upon request to Endowment Manager and the CPM.

1.3.3. Transfer Long-term Endowment Funds. The project owner shall transfer the long- term endowment funds to the Endowment Manager upon the CPM's approval of the Endowment Deposit Amount identified above.

1.3.4. Management of the Endowment. The approved Endowment Manager may pool the Endowment with other endowments for the operation, management,

and protection of HM lands for local populations of the Swainson's hawk but shall maintain separate accounting for each Endowment. The Endowment Manager shall, at all times, hold and manage the Endowment in compliance with this condition, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

Notwithstanding Probate Code sections 18501-18510, the Endowment Manager shall not make any disbursement from the Endowment that will result in expenditure of any portion of the principal of the endowment without the prior written approval of CPM in its sole discretion. The project owner shall ensure that this requirement is included in any agreement of any kind governing the holding, investment, management, and/or disbursement of the Endowment funds.

Notwithstanding Probate Code sections 18501-18510, if the CPM, in consultation with CDFW, determines in its discretion that an expenditure needs to be made from the Endowment to preserve the conservation values of the HM lands, the Endowment Manager shall process that expenditure in accordance with directions from the CPM. The Endowment Manager shall not be liable for any shortfall in the Endowment resulting from CPM's decision to make such an expenditure.

- 1.4. Reimburse CDFW. Permittee shall reimburse CDFW for all reasonable costs incurred by CDFW related to transfer of HM lands to CDFW, including, but not limited to transaction fees, account set-up fees, administrative fees, title and documentation review and related title transactions, costs incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW.
2. Security. The project owner may proceed with pre-construction site mobilization only after the project owner has ensured funding (Security) to complete any activity required by subsection 1.3 that has not been completed before project activities may begin. Project owner shall provide Security as follows:
 - 2.1. Security Amount. The Security shall be in the amount of \$8,047,609 or in the amount identified in subsection 1.1 specific to the obligation that has not been completed. This amount is determined by CPM based on the cost estimates

identified in subsection 1.1 above, sufficient for CDFW or its contractors to complete land acquisition, property enhancement, startup costs, initial management, long-term management, and monitoring.

- 2.2. Security Form. The Security shall be in the form of an irrevocable letter of credit (available from the CPM) or another form of Security approved in advance in writing by the CPM, in consultation with CDFW.
- 2.3. Security Timeline. The Security shall be provided to the CPM before pre-construction site mobilization begins.
- 2.4. Security Holder. The Security shall be held by CPM or in a manner approved in advance in writing by CPM.
- 2.5. Security Transmittal. The project owner shall transmit security to CPM by way of an approved instrument such as an escrow agreement, irrevocable letter of credit, or other.
- 2.6. Security Drawing. The Security shall allow CPM to draw on the principal sum if CPM, in its sole discretion, determines that the project owner has failed to comply with the Conditions of Certification.
- 2.7. Security Release. The Security (or any portion of the Security then remaining) shall be released to the project owner after CPM has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by:

Habitat Management Land Acquisition

- Written documentation of the acquisition of the HM lands;
- Copies of all executed and recorded conservation easements; and
- Written confirmation from the approved Endowment Manager of its receipt of the full Endowment.

Documentation Success Criteria is met per **BIO-9**

- Timely submission of all required reports
- Meeting the success criteria for the Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan (**BIO-9**)
- Written documentation of Perpetual Tree Protection conservation easement or similar instrument recordation

- c. Even if Security is provided, the project owner shall complete the

required Perpetual Tree Protection easement and onsite mitigation, including meeting the Success Criteria specified in the Swainson's Hawk Conservation Strategy and Foraging Habitat Revegetation and Management Plan (**BIO-9**).

The project owner shall provide Security in the amount of \$8,047,609, in the form of an irrevocable letter of credit or another form of Security approved to the CPM prior to start of pre-construction site mobilization.

Verification: The project owner shall provide the CPM with approved Security at least 30 days prior to the start of pre-construction site mobilization activities. The project owner shall provide the recorded conservation easement within 24 months from the start of pre-construction site mobilization.

BIO-12 Burrowing Owl Impact Avoidance, Minimization, and Take

Mitigation Measures. The project owner shall implement the following measures to avoid, minimize and offset impacts to breeding and foraging burrowing owls during construction and operation, and decommissioning:

1. Burrowing Owl Pre-Construction Nesting Surveys and Reporting. The Designated Biologist and/or Biological Monitor shall conduct pre-construction surveys for burrowing owls to identify potential, known, and/or nesting burrowing owl burrows. A potential burrowing owl burrow is any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or any past use by a burrowing owl; a known burrowing owl burrow is a burrow that shows evidence the burrow is being used, known to have been used, or past use by a burrowing owl, or an "atypical" burrow (e.g., a pipe, culvert, buckled concrete, etc.) showing signs of occupancy (e.g. burrowing owl presence, whitewash, pellets, prey remains, etc.); and a nesting burrowing owl burrow is used for nesting (e.g. known burrowing owl burrow indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation. The survey area shall include the project disturbance area and surrounding 500-foot survey buffer, as accessible.
2. Burrowing Owl Artificial Burrow Replacement Plan. The project owner shall replace each known burrowing owl burrow (as defined in the Burrowing Owl Burrow Avoidance, Item 6) that cannot be avoided within the project site with an artificial burrow to compensate for the loss of important shelter used by burrowing owl for protection, reproduction, and escape from predators. The project owner shall submit a Burrowing Owl Artificial Burrow Replacement Plan prepared by the approved Designated Biologist to the CPM prior to pre-construction site mobilization. Implementation of the Burrowing Owl Artificial Burrow Replacement Plan shall not proceed until this plan has been approved in writing by the CPM. The Burrowing Owl Artificial Burrow Replacement Plan shall include, but not be limited to: a

discussion and map of potential artificial burrow replacement locations; description of the replacement burrow design and dimensions (e.g., depth and width of burrow, width of burrow entrance, orientation of burrow entrance, number and placement of entrances to natal burrows); artificial burrow installation methods; long-term artificial burrow maintenance methods; and timing of burrowing owl burrow installation/construction.

Upon CPM approval, in writing, the Burrowing Owl Artificial Burrow Replacement Plan, it shall be used for the duration of construction, operation, and decommissioning, unless updated by the CPM to reflect best available science and/or to update mitigation and conservation strategies in which case the CPM will contact the project owner to discuss needed updates. Any proposed changes to the Burrowing Owl Burrow Replacement Plan shall be submitted to the CPM and approved by the CPM in writing, prior to the implementation of any proposed modifications.

3. BUOW Mortality Reduction Plan. The project owner shall submit a Burrowing Owl Mortality Reduction Plan prepared by an approved Designated Biologist to the CPM prior to commencing burrowing owl burrow exclusion, burrow excavation, artificial burrow construction, and other relocation activities (collectively termed Burrowing Owl Exclusion Activities). Burrowing Owl Exclusion Activities shall not proceed until this plan has been approved in writing by the CPM. The Burrowing Owl Mortality Reduction Plan shall include, but not be limited to: detailed description of survey methodology; detailed burrow exclusion and excavation methods; proposed Covered Activities that may be performed within burrowing owl avoidance buffers; identification of a wildlife rehabilitation center or veterinary facility capable of and willing to treat injured burrowing owl or care for at-risk burrowing owl, burrowing owl eggs, and/or burrowing owl chicks; and procedure for collection and storage of burrowing owl carcasses. Only CPM-approved Designated Biologists, or personnel following directions from and under the supervision of the Designated Biologist, are authorized to handle and transport injured burrowing owl for treatment or impacted burrowing owl eggs for salvage. All other burrowing owl handling is prohibited.

Once the Burrowing Owl Mortality Reduction Plan is approved in writing by the CPM, it shall be used for the duration of the project unless updates are required by CPM to reflect best available science and/or to update mitigation and conservation strategies in which case the CPM will contact the project owner to discuss needed updates. Any proposed changes to the Burrowing Owl Mortality Reduction Plan shall be submitted, in writing, to the CPM and approved in writing prior to the implementation of any proposed modifications.

4. Burrowing Owl Pre-Construction Surveys and Reporting. The Designated Biologist(s) shall conduct surveys to identify potential, known, and/or

nesting burrowing owl burrows (as defined in the nesting Burrowing Owl Pre-Construction Surveys (Item 1)) prior to beginning Burrowing Owl Exclusion Activities in each distinct work area(s) (a work site/phase within the project site. Surveys shall include the work area and 500 feet (where feasible) beyond the limits of the project site (or distinct work area(s)), unless otherwise approved in advance in writing by the CPM. If the Designated Biologist(s) identifies any potential, known, or nesting burrowing owl burrows, the burrow(s) shall be monitored following the Burrowing Owl Burrow Blockage (Item 7) and Burrowing Owl Burrow Excavation (Item 8), unless avoided per the nesting Burrowing Owl Burrow Avoidance (Item 6). The project owner shall provide the preconstruction survey results with a Burrow Map (see Burrow Map Item 5) in a written report to the CPM prior to starting Burrowing Owl Exclusion Activities on the project site or in each distinct work area(s). The report shall include, but not be limited to, methodology, survey date, and apparent status of each burrow (potential, known, or nesting).

5. Burrow Map. The Designated Biologist shall provide a Keyhole Markup Language zipped (KMZ) map and Geographic Information System (GIS) shapefiles to the CPM of all Burrowing Owl burrows found during the surveys performed per the Burrowing Owl Pre-Construction Surveys and Reporting (Item 1). The map shall show details and locations of all burrowing owl sightings and potential, known, and nesting burrowing owl burrows as defined in the Burrowing Owl Burrow Avoidance (Item 6). The map shall include an outline of the project area and any distinct work area(s) surveyed within the project area, title, north arrow, scale bar, and legend.
6. Burrowing Owl Burrow Avoidance. The project owner shall establish no-disturbance buffer zones around potential, known and nesting burrowing owl burrows according to the following guidelines:
 - a. If a potential burrowing owl burrow (any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or any past use by a burrowing owl) is discovered, the project owner shall establish a minimum a 50-foot no-disturbance buffer around the burrow.
 - b. If a known burrowing owl burrow (a burrow that shows evidence the burrow is being used, known to have been used, or past use by a burrowing owl) or an "atypical" burrow (e.g., a pipe, culvert, buckled concrete, etc.) showing signs of occupancy (e.g. burrowing owl presence, whitewash, pellets, prey remains, etc.) is discovered, the project owner shall establish a minimum no-disturbance buffer of at least 100 feet around the burrow. A no-disturbance buffer of at least 1,600 feet shall be established around known burrowing owl burrows

currently occupied by burrowing owl during the nesting season (typically February 1 to August 31 in this area).

- c. If a nesting burrowing owl burrow (e.g. known burrowing owl burrow indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation) is discovered within or immediately adjacent to the project area, the project owner shall notify the CPM immediately via e-mail. A no-disturbance buffer of at least 1,600 feet shall be established around the nest burrow. A no-disturbance buffer of at least 1,600 feet shall be established around known burrowing owl burrows currently occupied by burrowing owl during the nesting season (February 1 to August 31).
- d. If burrowing owl burrows cannot be avoided as described above, then the project owner shall follow the Burrowing Owl Burrow Blockage (Item 7), Burrowing Owl Burrow Excavation, (Item 8) and Burrowing Owl Mortality Reduction Plan (Item 3) as appropriate. If burrowing owl are visibly stressed by the project activities or workers in the vicinity after these no-disturbance buffers are established, all work in the vicinity shall immediately cease and increased no-disturbance buffers will be determined by the Designated Biologist(s) based on their behavioral observations of the affected burrowing owl.

The buffers prescribed above shall not be reduced or otherwise modified without prior written CPM approval. If the Designated Biologist determines that specific project activities are not likely to affect the burrowing owl using known or nesting burrowing owl burrows due to the nature of the specific project activities and/or due to objects or topography that might reduce potential noise disturbance and obstruct view of the project activities from the nest, then the Designated Biologist may email a written request to the CPM to reduce the buffer distance with documented observational data (Buffer Reduction Request). The CPM will review each Buffer Reduction Request on a case-by-case basis and provide a determination in response to each Buffer Reduction Request in writing. The CPM may request additional and/or ongoing biological monitoring prior to approving a Buffer Reduction Request.

- 7. Burrowing Owl Burrow Blockage. Where the CPM has approved a buffer reduction, the project owner shall block rather than destroy any Burrowing Owl Burrow located within the buffer distances prescribed by the Burrowing Owl Burrow Avoidance (Item 6), but outside the discrete work area(s) within the project site where ground- and vegetation-disturbing project activities will be performed. Burrows (including burrows in natural substrate and in/under man-made structures) may be blocked only immediately after the Designated Biologist(s) has conducted four consecutive 24-hour periods of monitoring with infrared camera and determined that burrowing owl is

not currently present. Burrow blockage shall be done in a manner that prevents burrowing animals from digging back into the burrow. All blocked burrows shall be monitored by the Designated Biologist or Designated Monitor at least once every 48 hours to ensure that the exclusion material is still intact. If burrowing owl regains access to the burrow, the project owner shall contact the CPM immediately and obtain written guidance regarding how to proceed. All blocked burrows shall be unblocked within 48 hours of completion of construction within the prescribed buffer distance.

8. Burrowing Owl Burrow Excavation. The Designated Biologist, or Biological Monitor under direct supervision of the Designated Biologist, shall excavate known or potential burrows that exhibit signs of current or past burrowing owl use or characteristics suggestive of a burrowing owl burrow (including burrows in natural substrate and in/under man-made structures) that cannot be avoided per the Burrowing Owl Burrow Avoidance (Item 6) and that are within the project site. All excavation shall be conducted in accordance with the approved Burrowing Owl Mortality Reduction Plan.

Excavation of known burrowing owl burrows shall only occur after the Designated Biologist has determined that burrowing owl is not currently present after four consecutive 24-hour periods of monitoring with infrared cameras. If the excavation process reveals evidence of current use by burrowing owl, then burrow excavation shall cease immediately, and camera monitoring as described above shall be conducted/resumed. Burrowing owl burrows shall be carefully excavated with hand tools, or by mechanical means if a specific methodology is approved in writing by the CPM, until it is clear no individuals of burrowing owl are inside.

Potential burrowing owl burrows without any signs of burrowing owls or characteristics suggesting it is an active burrowing owl burrow may be excavated under the direct supervision of the Designated Biologist without camera monitoring.

Nesting burrowing owl burrows used for nesting shall not be excavated until monitoring by the Designated Biologist and camera monitoring confirm that the chicks have fledged and are no longer dependent on the nest and then only after written concurrence from the CPM.

Immediately following excavation, burrows shall then be filled with soil, and compacted to ensure that burrowing owl cannot reenter or use the burrow during project activities.

If the excavation process reveals burrowing owl eggs, young, or adults, then burrow excavation shall cease immediately and monitoring as described above shall be conducted/resumed. The project owner shall contact the CPM within 24 hours of the observation and get written

guidance prior to proceeding with burrow filling if an individual burrowing owl does not vacate the partially excavated burrow within a reasonable timeframe.

An established burrowing owl burrow no-disturbance buffer may be removed once the burrow is collapsed and the burrowing owl(s) is/are no longer using the burrow.

9. Burrowing Owl Injury. If a burrowing owl is injured or found dead within the vicinity of the project site, the project owner shall notify the CPM of the injury or mortality to the burrowing owl immediately by e-mail. The initial notification to the CPM shall include information regarding the location, species, and number of animals taken or injured. Following initial notification, the project owner shall send the CPM a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible, provide a photograph(s), explanation as to cause of take or injury, and any other pertinent information.

The Designated Biologist shall follow the Burrowing Owl Mortality Reduction Plan (Item 3) to either immediately transport injured individuals to a CPM - approved wildlife rehabilitation center or veterinary facility or follow approved collection and storage procedures for deceased animals. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

10. Burrowing Owl Observations and Notification. All workers shall inform the Designated Biologist if burrowing owl is seen within or near the project area during implementation of any project activity. All work in the vicinity of the burrowing owl which could harm the individual, shall cease until the individual moves from the project site of its own accord or the Designated Biologist passively encourages the individual to move out of harm's way, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan (3).
11. Operation Activities Designated Biologist On-site. The CPM-approved Designated Biologist(s) or Biological Monitor(s) shall be on-site during all ground- and vegetation-disturbing activities. The Designated Biologist shall be on-site during all non-emergency ground- and vegetation-disturbing project activities performed at night.
12. Operation and Maintenance Activities Work Hours. The project owner shall confine any operation and maintenance project activities to daylight hours (sunrise to sunset) with the exception of any operation or replacement work that must occur after dark to ensure PV arrays are not energized, emergency response activities (e.g. catastrophic failures, security issues,

etc.), or burrowing owl take minimization measures as applicable. The project owner shall ensure that all vehicle traffic necessary during project activities be conducted at speeds of less than 10 mph to minimize impacts to burrowing owl (only on project site; not on public roads).

13. Operation Activities Vehicle Parking. During all operation activities or burrowing owl take minimization measures, the project owner shall not allow vehicles to park on top of potential burrowing owl burrows. Vehicles left overnight shall not be located within 50 feet of burrowing owl (known or potential) burrows.
14. Operation Phase Vehicle and Equipment Inspection. During the operation phase, workers shall inspect for burrowing owl under vehicles and equipment every time the vehicles and equipment are moved. If a burrowing owl is present, the worker shall wait for the burrowing owl to move unimpeded to a safe location. Alternatively, the Designated Biologist shall be contacted to passively encourage the burrowing owl to move away from the vehicle or equipment, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan (Item 3).
15. Operation Activities Pipes and Materials Inspection. The project owner shall ensure that all pipes or similar materials stockpiled or replaced in the Project Area are capped or otherwise enclosed at the ends to prevent entry by burrowing owl. The project owner shall not leave any permanent pipes or similar materials or structures open where burrowing owl or other species may enter them and become trapped. The Designated Biologist shall thoroughly inspect all such materials for burrowing owl before they are moved, buried, or capped. If a burrowing owl is discovered inside such material, that section of material shall not be moved until the animal has escaped of its own accord. Alternatively, the Designated Biologist may passively encourage the burrowing owl to move away from the pipes, culverts, or similar structures, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan (Item 3).
16. Operation Ground- and Vegetation-Disturbing Project Activities. The Burrowing Owl Pre-Construction Surveys and Reporting (Item 1) shall be implemented within 30 calendar days prior to commencing ground- or vegetation-disturbing activities during operation in each distinct Work Area(s) within the project site. If the Designated Biologist identifies any potential, known, or nesting burrowing owl burrows, the burrow(s) shall be monitored following the Burrowing Owl Burrow Blockage (Item 6) and Burrowing Owl Burrow Excavation (Item 8), unless avoided per the Burrowing Owl Burrow Avoidance (Item 6).
17. Operation Activities Burrowing Owl Observations. During all Operation Activities within the project site, all workers shall inform the Designated Biologist(s) if a burrowing owl is observed within or near the Project Area.

All work in the vicinity of the burrowing owl, which could injure or kill the animal, shall cease immediately until the burrowing owl moves from the project site of its own accord or the Designated Biologist passively encourages the individual to move out of harm's way, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan (Item 3).

18. Operation Activities Burrowing Owl Injury. If a burrowing owl is injured or found dead within the vicinity of the Project Area, the Project Owner shall notify the CPM of the injury or mortality to the burrowing owl immediately by e-mail as described in Item 9. The Designated Biologist shall follow the Burrowing Owl Mortality Reduction Plan (Item 3) to either immediately transport injured individuals to a CPM-approved wildlife rehabilitation center or veterinary facility or follow approved collection and storage procedures for deceased animals. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

Verification: The Designated Biologist shall provide to the CPM preconstruction survey results to the CPM within 10 days of the completion of the survey. If surveys detect burrowing owls within 500 feet of proposed construction activities, the Designated Biologist shall provide to the CPM documentation indicating that non-disturbance buffer fencing has been installed no less than 10 days prior to the start of any project-related site disturbance activities. The documentation shall include information as specified in Items 4 and 5, or as otherwise requested by the CPM.

If pre-construction surveys detect burrowing owls or active burrowing owl burrows within the project disturbance area, the project owner shall provide to the CPM a Burrowing Owl Mortality Reduction Plan prior to the start of activities (the measures described in the plan shall be incorporated into the BRMIMP and implemented.) The plan shall be for review and comment by the CPM and shall be finalized no less than 30 days prior to commencing pre-construction site mobilization.

The project owner shall submit a Burrowing Owl Artificial Burrow Replacement Plan to the CPM for review and comment at least 30 days prior to initiation of pre-construction site mobilization. At the conclusion of the construction period, the Project Owner shall submit a final Burrowing Owl Mitigation Implementation Report detailing location of all burrowing owl observed, take measures implemented, and their effectiveness.

During operations, the project owner shall include in the Annual Compliance Report an accounting of all burrowing owl documented on site, including copies of the Designated Biologist or Biological Monitor's field notes, any buffers zones

erected, maps, additional avoidance and minimization measures implemented, and their perceived effectiveness.

BIO-13 Burrowing Owl Habitat Compensation. To mitigate for impacts to burrowing owl, the project owner shall:

1. Habitat Management Land Acquisition for Burrowing Owl. To meet this requirement, the project owner shall either purchase a minimum of 200 acres of burrowing owl or other mitigation or conservation bank credits approved in advance by the CPM pursuant to the Burrowing Owl Credits (subsection 1.2, below) or shall provide for both the permanent protection and management of 200 acres of Habitat Management (HM) lands pursuant to the Habitat Management Lands Acquisition and Protection (subsection 1.3, below) and the calculation and deposit of the management funds pursuant to the Endowment Fund Condition of Approval (subsection 1.4, below). Purchase of burrowing owl credits or permanent protection and funding for perpetual management of HM lands must be complete before starting pre-construction site mobilization, or within 24 months of the pre-construction site mobilization if Security is provided pursuant to the Security (Section 2, below) for all uncompleted obligations.
 - 1.1. Cost Estimates. For the purposes of determining the Security amount, the estimated cost is sufficient for the CPM or its contractors to complete acquisition, protection, and perpetual management of the HM lands as follows:
 - 1.1.1. Land acquisition costs for HM lands identified in Habitat Management Lands Acquisition and Protection (subsection 1.3, below), estimated at \$2318.00/acre for 200 acres: \$463,600.00. Land acquisition costs are estimated using local fair market current value per acre for lands with habitat values meeting mitigation requirements.
 - 1.1.2. All other costs necessary to review and acquire the land in fee title and record a conservation easement as described in Conservation Easement (subsection 1.3.2, below): \$268,600.00.
 - 1.1.3. Start-up costs for HM lands, including initial site protection and enhancement costs as described in Start-up Activities (subsection 1.3.6, below), estimated at \$74,890.00.
 - 1.1.4. Interim management period funding as described in Interim Management (Initial and Capital) (subsection 1.3.7, below), estimated at \$196,512.00.
 - 1.1.5. Long-term management funding as described in Endowment Fund (subsection 1.4, below), estimated at \$683,515.00.

- 1.1.6. Related transaction fees including but not limited to account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW as described in Reimburse CDFW (Section 1.5, below), estimated at \$12,000.00.
- 1.1.7. All costs associated with the CPM engaging an outside contractor to complete the mitigation tasks, including but not limited to acquisition, protection, and perpetual funding and management of the HM lands and restoration of temporarily disturbed habitat. These costs include but are not limited to the cost of issuing a request for proposals, transaction costs, contract administration costs, and costs associated with monitoring the contractor's work \$42,000.00.
- 1.2. Burrowing Owl Credits. If the project owner elects to purchase credits to complete burrowing owl compensatory mitigation obligations, then the project owner shall purchase 200 acres of burrowing owl credits from a mitigation or conservation bank approved in advance by the CPM prior to initiating pre-construction site mobilization, or no later than 24 months from the start of pre-construction site mobilization, if Security is provided pursuant to the Security Condition of Approval below. Prior to purchase of credits, the project owner shall obtain CPM approval to ensure the mitigation or conservation bank is appropriate to compensate for the impacts of the Project. The project owner shall submit to the CPM a copy of the Bill of Sale(s) and Payment Receipt prior to initiating pre-construction site mobilization or within 24 months from the start of pre-construction site mobilization if Security is provided.
- 1.3. Habitat Management Lands Acquisition and Protection. If the project owner elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall:
 - 1.3.1. Fee Title. Transfer fee title of the HM lands to CDFW pursuant to terms approved in writing by CDFW. Alternatively, the CPM, in consultation with CDFW, may authorize a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended;
 - 1.3.2. Conservation Easement. If CDFW does not hold fee title to the HM lands, CDFW shall act as grantee for a conservation

easement over the HM lands or shall, in the CPM's discretion, in consultation with CDFW, approve a non-profit entity, public agency, or Native American tribe to act as grantee for a conservation easement over the HM lands provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If CDFW elects not to be named as the grantee for the conservation easement, CDFW shall be expressly named in the conservation easement as a third-party beneficiary. The Project owner shall obtain CDFW written approval of any conservation easement before its execution or recordation. No conservation easement shall be approved by the CPM, in consultation with CDFW, unless it complies with Civil Code sections 815-816, as amended, and Government Code sections 65965-65968, as amended and includes provisions expressly addressing Government Code sections 65966(j) and 65967(e). Because the "doctrine of merger" could invalidate the conservation interest, under no circumstances can the fee title owner of the HM lands serve as grantee for the conservation easement.

- 1.3.3. HM Lands Approval. Obtain CPM written approval of the HM lands before acquisition and/or transfer of the land by submitting, at least three months before acquisition and/or transfer of the HM lands, documentation identifying the land to be purchased or property interest conveyed to an approved entity as mitigation for the project's impacts on burrowing owl;
- 1.3.4. HM Lands Documentation. Provide a recent preliminary title report, Phase I Environmental Site Assessment, and other necessary documents (please contact CPM for document list). All documents conveying the HM lands and all conditions of title are subject to the approval of the CPM and if applicable, the Wildlife Conservation Board and the Department of General Services;
- 1.3.5. Land Manager. Designate both an interim and long-term land manager approved by the CPM. The interim and long-term land managers may, but need not, be the same. The interim and/or long-term land managers may be the landowner or another party. The land manager shall prepare a draft management plan for CPM review and written approval as part of the HM lands acquisition process. The project owner shall notify the CPM of any subsequent changes in the land manager within 30 days of the change. If CDFW will hold fee title to the mitigation land, CDFW will also act as both the interim and long-term land manager unless otherwise specified. The grantee for the

conservation easement cannot serve as the interim or long-term manager without the express written authorization of the CPM in consultation with CDFW;

- 1.3.6. Start-up Activities. Provide for the implementation of start-up activities, including the initial site protection and enhancement of HM lands, once the HM lands have been approved by the CPM. Start-up activities include, at a minimum: (1) conducting a baseline biological assessment and land survey report within four months of recording or transfer; (2) developing and transferring Geographic Information Systems (GIS) data if applicable; (3) establishing initial fencing; (4) conducting litter removal; (5) conducting initial habitat restoration or enhancement, if applicable; and (6) installing signage;
- 1.3.7. Interim Management (Initial and Capital). Provide for the interim management of the HM lands. The Permittee shall ensure that the interim land manager implements the interim management of the HM lands as described in the final management plan and conservation easement approved by the CPM. The interim management period shall be a minimum of three years from the date of HM land acquisition and protection and full funding of the Endowment and includes expected management following start-up activities. Interim management period activities described in the final management plan shall include fence repair, continuing trash removal, site monitoring, and vegetation and invasive species management.

The project owner shall either (1) provide Security to the CPM for the minimum of three years of interim management that the land owner, Permittee, or land manager agrees to manage and pay for at their own expense, (2) establish an escrow account with written instructions approved in advance in writing by the CPM to pay the land manager annually in advance, or (3) establish a short-term enhancement account with the CPM or a the CPM approved entity for payment to the land manager.

- 1.4. Endowment Fund. If the project owner elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall ensure that the HM lands are perpetually managed, maintained, and monitored by the long-term land manager as described in condition, the conservation easement, and the final management plan approved by the CPM. After obtaining CPM approval of the HM lands, Permittee shall provide long-term management funding for the perpetual management of the HM lands by establishing

a long-term management fund (Endowment). The Endowment is a sum of money, held in a CPM-approved fund that is permanently restricted to paying the costs of long-term management and stewardship of the mitigation property for which the funds were set aside, which costs include the perpetual management, maintenance, monitoring, and other activities on the HM lands consistent with this condition of certification, the conservation easement, and the management plan required by Land Manager (Section 1.3.5). Endowment as used in this condition of certification shall refer to the endowment deposit and all interest, dividends, other earnings, additions and appreciation thereon. The Endowment shall be governed by this Condition of Certification, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

After the interim management period, the project owner shall ensure that the designated long-term land manager implements the management and monitoring of the HM lands according to the final management plan. The long-term land manager shall be obligated to manage and monitor the HM lands in perpetuity to preserve their conservation values in accordance with this condition of certification, the conservation easement, and the final management plan. Such activities shall be funded through the Endowment.

1.4.1. Identify an Endowment Manager. The Endowment shall be held by the Endowment Manager, which shall be either the CDFW or another entity qualified pursuant to Government Code sections 65965-65968, as amended.

The project owner shall submit to the CPM a written proposal that includes: (i) the name of the proposed Endowment Manager; (ii) whether the proposed Endowment Manager is a governmental entity, special district, nonprofit organization, community foundation, or congressionally chartered foundation; (iii) whether the proposed Endowment Manager holds the property or an interest in the property for conservation purposes as required by Government Code section 65968(b)(1) or, in the alternative, the basis for finding that the project qualifies for an exception pursuant to Government Code section 65968(b)(2); and (iv) a copy of the proposed Endowment Manager's certification pursuant to Government Code section 65968(e).

Within thirty days of the CPM's receipt of the project owner's written proposal, the CPM shall inform the project owner in

writing if it determines the proposal does not satisfy the requirements of Fish and Game Code section 2081(b)(3) and, if so, shall provide Permittee with a written explanation of the reasons for its determination. If the CPM does not provide Permittee with a written determination within the thirty-day period, the proposal shall be deemed consistent with Section 2081(b)(3).

- 1.4.2. Calculate the Endowment Funds Deposit. After obtaining the CPM's written approval of the HM lands, long-term management plan, and Endowment Manager, the project owner shall prepare an endowment assessment (equivalent to a Property Analysis Record (PAR)) to calculate the amount of funding necessary to ensure the long-term management of the HM lands (Endowment Deposit Amount). Note that the endowment for the easement holder should not be included in this calculation. The project owner shall submit the CPM for review and approval the results of the endowment assessment before transferring funds to the Endowment Manager.

- 1.4.2.1. Capitalization Rate and Fees. The project owner shall obtain the capitalization rate from the selected Endowment Manager for use in calculating the endowment assessment and adjust for any additional administrative, periodic, or annual fees.

- 1.4.2.2. Endowment Buffers/Assumptions. The project owner shall include in the endowment assessment assumptions the following buffers for endowment establishment and use that will substantially ensure long-term viability and security of the Endowment:

- 1.4.2.2.1. 10 Percent Contingency. A 10 percent contingency shall be added to each endowment calculation to hedge against underestimation of the fund, unanticipated expenditures, inflation, or catastrophic events.

- 1.4.2.2.2. Three Years Delayed Spending. The endowment shall be established assuming spending will not occur for the first three years after full funding.

- 1.4.2.2.3. Non-annualized Expenses. For all large capital expenses to occur periodically but not annually such as fence replacement or well replacement, payments shall be

withheld from the annual disbursement until the year of anticipated need or upon request to Endowment Manager and the CPM.

1.4.3. Transfer Long-term Endowment Funds. The project owner shall transfer the long-term endowment funds to the Endowment Manager upon CPM approval of the Endowment Deposit Amount identified above.

1.4.4. Management of the Endowment. The approved Endowment Manager may pool the Endowment with other endowments for the operation, management, and protection of HM lands for local populations of the burrowing owl but shall maintain separate accounting for each Endowment. The Endowment Manager shall, at all times, hold and manage the Endowment in compliance with this condition of certification, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

Notwithstanding Probate Code sections 18501-18510, the Endowment Manager shall not make any disbursement from the Endowment that will result in expenditure of any portion of the principal of the endowment without the prior written approval of CPM in its sole discretion. Permittee shall ensure that this requirement is included in any agreement of any kind governing the holding, investment, management, and/or disbursement of the Endowment funds.

Notwithstanding Probate Code sections 18501-18510, if the CPM, in consultation with CDFW, determines in its sole discretion that an expenditure needs to be made from the Endowment to preserve the conservation values of the HM lands, the Endowment Manager shall process that expenditure in accordance with directions from the CPM. The Endowment Manager shall not be liable for any shortfall in the Endowment resulting from CPM's decision to make such an expenditure.

1.5. Reimburse CDFW. The project owner shall reimburse CDFW for all reasonable costs incurred by CDFW related to transfer of HM lands to CDFW, including, but not limited to transaction fees, account set-up fees, administrative fees, title and documentation review and related title transactions, costs incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW.

2. Security: The project owner may proceed with Burrowing Owl Exclusion Activities only after the project owner has ensured funding (Security) to

complete any activity required by Habitat Management Land Acquisition (subsection 2.7) that has not been completed before Covered Activities begin. The project owner shall provide Security as follows:

- 2.1. Security Amount. The Security shall be in the amount of \$1,741,117.00 or in the amount identified in Cost Estimates (Section 1.1, above) specific to the obligation that has not been completed. This amount is determined by the CPM based on the cost estimates sufficient for the CDFW or its contractors to complete land acquisition, property enhancement, startup costs, initial management, long-term management, and monitoring.
- 2.2. Security Form. The Security shall be in the form of an irrevocable letter of credit (template to be provided by the CPM upon request), or another form of Security approved in advance in writing by the CPM, in consultation with CDFW.
- 2.3. Security Timeline. The Security shall be provided to CPM before starting preconstruction site mobilization.
- 2.4. Security Holder. The Security shall be held by the CPM or in a manner approved in advance in writing by the CPM
- 2.5. Security Transmittal. The project owner shall transmit security to the CPM by way of an approved instrument such as an escrow agreement, irrevocable letter of credit, or other.
- 2.6. Security Drawing. The Security shall allow the CPM to draw on the principal sum the CPM, in its sole discretion, determines that the project owner has failed to comply with the conditions of certification for burrowing owl (i.e. **BIO-12** and **BIO-13**)
- 2.7. Security Release. The Security (or any portion of the Security then remaining) shall be released to the project owner after the CPM has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by either:

Credit Purchase

- Copy of Bill of Sale(s) and Payment Receipt(s) or Credit Transfer Agreement for the purchase of burrowing owl credits.

Habitat Management Land Acquisition

- Written documentation of the acquisition of the HM lands;
- Copies of all executed and recorded conservation easements; and
- Written confirmation from the approved Endowment Manager of its receipt of the full Endowment.

3. Even if Security is provided, the project owner must complete the required acquisition, protection and transfer of all HM lands and record any required conservation easements no later than 24 months from the start of pre-construction site mobilization.

The project owner shall provide Security in the amount of \$1,741,117.00 in the form of an irrevocable letter of credit or another form of Security approved to the CPM prior to the start of construction

Verification: The project owner shall provide Security in the amount of in the form of an irrevocable letter of credit or another form of Security approved to the CPM prior to the start of pre-construction site mobilization, or the project owner may alternatively submit to the CPM a copy of the Bill of Sale(s) and Payment Receipt prior to initiating pre-construction site mobilization or within 24 months from issuance of the pre-construction site mobilization if Security is provided.

BIO-14 American Badger Avoidance and Minimization Measures. To avoid impacts to American badger in construction areas, preconstruction surveys shall be conducted. All avoidance and minimization measures shall be included in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and implemented. Surveys shall be conducted as described below:

1. Designated Biologist(s) and/or Biological Monitor(s) shall perform pre-construction surveys within 14 to 30 days prior to ground disturbance to identify badger setts (dens) in the project disturbance area, including a 500-foot buffer beyond the disturbance area as well linear facilities (e.g. generation intertie line corridor, project access roads, and/or helicopter landing zones). If surveys need to be conducted less than 14 days before construction, approval must be obtained from the CPM.
2. If dens are detected each den shall be classified as inactive, potentially active, or definitely active.
3. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse. Before backfilling, a final re-check shall be conducted to confirm no recent activity.
4. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Designated Biologist or Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or flour) and/or infrared camera stations at the entrance.
5. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand.

6. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage continued use.
 - After verification that the den is unoccupied it shall then be excavated by hand and backfilled to ensure that no American badgers or San Joaquin kit fox, or other species, are trapped in the den.
 - If a San Joaquin kit fox is detected, all backfilling shall immediately cease. No personnel shall approach the den, and no construction activities shall occur within 500 feet of the den. The project owner and/or Designated Biologist must immediately contact the CPM for guidance. Refer to **BIO-15** for appropriate actions.
 - Pupping season occurs from February 1 through June 30, and no exclusion or eviction measures (e.g., progressive blocking) shall be implemented during pupping season without prior approval from the CPM.
7. If active dens or active natal dens are detected, a no-disturbance buffer zone (protected area surrounding the den) shall be established around each active den. The following buffer zones shall be used within project disturbance areas:
 - 50 feet for occupied dens
 - 500 feet of a known natal den, or as otherwise approved by the CPM.
8. Dens located outside the project site shall not be flagged but shall be monitored to assess any potential impacts from construction activities.
9. All occupied burrows and dens shall be monitored for signs of noise or vibratory disturbance during construction, and buffers shall be increased as needed to avoid significant impacts. Monitoring shall be conducted at least once per day during active construction within 500 feet of an occupied natal den.

Verification: The project owner shall submit a report to the CPM within 30 days of completion of American badger surveys. The report shall describe survey methods, results, impact avoidance and minimization measures implemented, and the results of those measures. Ongoing (operation) sightings and avoidance measures as implemented by the Designated Biologist(s) or Biological Monitor(s) shall be noted in the MCR/ACRs.

BIO-15 San Joaquin Kit Fox Avoidance and Minimization Measures. To avoid impacts to San Joaquin kit fox, pre-construction surveys shall be conducted in or near areas where San Joaquin kit fox could potentially occur. All avoidance and minimization measures shall be included in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and implemented.

Surveys shall be conducted as follows:

1. The Designated Biologist and/or Biological Monitor(s) shall perform pre-construction surveys for San Joaquin kit fox dens in the project disturbance area, including a 500-foot buffer beyond the disturbance area as well linear facilities where impacts such as crushing or entombing could occur (e.g. generation intertie line corridor, project access roads, and/or helicopter landing zones).
2. Surveys, regardless of previous results, shall be conducted 14 to 30 days prior to the beginning of ground and/or vegetation disturbing activities. If construction activities are phased the surveys shall be phased to include the project disturbance area. Additional follow up surveys shall be necessary for each phase if potential habitat is present. If surveys need to be conducted less than 14 days before construction, approval must be obtained from the CPM.
3. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active.
4. Recommendations identified in the United States Fish and Wildlife Service's (USFWS) "Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance" (USFWS 2011) or current USFWS recommendations, shall be implemented, including but not limited to on-site worker awareness training, construction materials inspection for SJKF before use, entrapment prevention, and regular food/trash disposal.
5. Construction buffers shall be installed as follows:
 - a. A minimum of 50 feet from a potential den,
 - b. A minimum of 50 feet from an atypical den (as described in USFWS 2011),
 - c. If a known or natal/pupping dens is detected, the project owner and/or Designated Biologist must immediately contact the CPM for guidance in consultation with CDFW and USFWS. The Designated Biologist shall maintain at least 150 feet from the den and at least a 500-foot buffer around natal/pupping dens until further guidance is provided. Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the USFWS.
6. If San Joaquin kit fox occurs in the project site, work within 500 feet of the animal shall be halted until the animal voluntarily leaves the area, as determined by the Designated Biologist and/or Biological Monitor. The CPM shall be notified by the end of the workday if a San Joaquin kit fox is detected in or adjacent to the project site.

Verification: The project owner shall submit a report to the CPM within 30 days of completion of San Joaquin kit fox surveys. The report shall include the names

of the surveyors and qualifications as well as describe survey methods, results, impact avoidance and minimization measures to be implemented. The project owner shall submit information describing the findings of any additional San Joaquin kit fox surveys and implementation of any avoidance measures in the Monthly Compliance Report (MCR) (per **BIO-6**) to the CPM.

BIO-16 Crotch's Bumble Bee Avoidance and Minimization Measures. To avoid impacts to Crotch's bumble bee, the Designated Biologist(s) and/or Biological Monitor(s) shall conduct a habitat assessment to determine if the project site and the immediate surrounding vicinity (up to 50 feet) contain habitat suitable to support foraging, nesting, and/or overwintering resources for Crotch's bumble bee. Potential nesting and overwintering sites, which include all small mammal burrows, perennial bunch grasses, thatched annual grasses, brush piles, old bird nests, dead trees, and hollow logs would need to be documented as part of the assessment. All floral resources shall be documented as well to identify potential for foraging at the site.

If potentially suitable habitat is identified, the Designated Biologist shall conduct focused (protocol level) surveys for Crotch's bumble bee and their requisite habitat features following the methodology outlined in the Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023) (or more recent published guidelines).

If Crotch's bumble bee is detected during construction or operation:

All small mammal burrows, thatched/bunch grasses, and suitable floristic resources shall be avoided by a minimum radius of 50 feet to avoid take and potentially significant impacts.

An avoidance buffer of 50 feet shall be established around any observed nests during both construction and operation.

If ground-disturbing activities will occur during the overwintering period (October through February), the project owner shall consult with the CPM to discuss how to implement project activities and avoid take.

Verification: The project owner shall submit the results of the habitat assessment to the CPM for review and approval within 30 days of completion, and prior to start of both construction and subsequent surveys (if necessary). If surveys are performed, the Designated Biologist shall report monthly in the MCR. The report shall describe survey methods, results, impact avoidance and minimization measures implemented, and the results of those measures. The Designated Biologist or Biological Monitor shall ensure that appropriate CNDDDB records are filed. The Designated Biologist shall report all sightings of this species on the project site to the CPM within 24 hours.

BIO-17 Avian and Bat Solar Conservation Plan. The project owner shall prepare and implement the following measures to monitor the death and injury of birds and bats from collisions with facility features such as photovoltaic (PV) panels and towers. The study design shall be approved by the CPM in consultation.

1. United States Fish and Wildlife Service (USFWS) Special Purpose Utility Permit (SPUT). The project owner shall apply for a California Department of Fish and Wildlife (CDFW) Scientific Collecting Permit and USFWS SPUT prior to commencement of operation of the project. The project owner shall provide a copy of the SPUT to the CPM prior to commencement of operation. The Designated Biologist shall report mortality and/or injury to avian species as required and submit to the USFWS. In addition, the project owner or Designated Biologist shall provide a copy of the USFWS Annual Report for Avian Injury Mortality in the Annual Compliance Report (ACR). The USFWS SPUT Permit shall be obtained and reporting shall be included in the Annual Compliance Report, per **BIO-6**. The project owner shall renew the SPUT, as recommended by the USFWS, through Decommissioning and Closure activities.
2. Informal Monitoring Plan. The project owner shall prepare an Informal Monitoring Plan (IMP) and implement an informal two-year monitoring study to monitor the death and injury of birds and bats caused by collisions with project facilities including solar facility and other project components. The study should also monitor other potential causes of project-related injury or mortality, including the generation-intertie, perimeter fence, and detention basins. The IMP shall be prepared in consultation with the Designated Biologist and shall be provided to the CPM for review and approval and to USFWS for review and comment prior to operation. Additionally, if preferred by the project owner, the 2-year IMP may be omitted and formal monitoring shall be initiated at the start of operation, as outlined below.
3. Mortality Sampling Methods. The IMP shall detail survey methods and shall identify proposed survey areas and the rationale for any areas not proposed for surveys. The IMP shall include maps and GIS data clearly defining each proposed survey area. Survey methods shall include a minimum of two visits during each spring and fall migration pulses, plus year-round surveys at monthly or more frequently, for an approximate total of 100 annual person-hours. A survey session shall be defined as within the IMP.

Surveys shall be informal and shall include non-randomized searching of the project site, prioritizing areas of higher risk such as solar arrays, gen-tie lines, detention ponds, stormwater retention ponds, and perimeter fences. Due to the large size of the project site, each survey session does not need to cover the solar field at once; instead, survey areas may be rotated to ensure full site coverage over time while maintaining efficiency and data

accuracy.

4. Surveyors. Surveyors shall follow planned routes, either walking or driving, to make sure target areas are well covered. If using a vehicle, a designated driver will be needed so the surveyor can focus on spotting and recording observations. Surveys shall be conducted by the Designated Biologist or Biological Monitors. If site personnel discover mortalities, they will document the finding with photos, mark the location with a cone, and report it to the Designated Biologist or Biological Monitor, who will then verify and identify the species.
5. Survey Timing. The migratory seasons shall be defined as spring migration from February 15 to May 31 and fall migration from August 15 to November 30, based on typical avian movement patterns in the region. Informal survey results may include anecdotal findings of dead bats or birds by non-biological staff (such as onsite contractors), the Designated Biologist, or Biological Monitors, and included in quarterly reports.
6. Reporting. The project owner will prepare a quarterly report documenting the results of mortality monitoring that are collected within the project site. The report shall include the species, number lost per project component, a map of location of each injured or dead bird or bat, and description of cause of injury or mortality, if known. The reports shall include all monitoring data required as part of the monitoring program.
7. Triggers For Formal Monitoring Study. Triggers for implementation of a Formal Monitoring Study shall include the following:
 - a. >25 native or migratory, non-special status birds in one survey session; or
 - b. >3 special-status birds (including raptors) in one survey session (excluding Swainson's hawks and burrowing owl); or
 - c. >50 native or migratory, non-special status birds in one spring or fall migratory season; or
 - d. Over a two year survey period, one special-status bat or more than 5 common bats are detected over three survey sessions.

Item 7 does not apply to Swainson's hawks and burrowing owl, as the project owner has incidental take authorization per the **BIO-10** and **BIO-12**

8. Avian and Bat Monitoring Study. If determined necessary by the CPM, in consultation with the CDFW and USFWS, following review of the results of the informal monitoring study outlined above, the project owner shall prepare and implement a formal monitoring study to monitor the death and injury of birds and bats caused by collisions with project facilities. The study design shall be based on the USGS Mortality Monitoring Design for Utility-scale Solar (Huso et al. 2016) or more current guidelines if available.

9. Avian and Bat Monitoring Plan. Visual surveillance of the solar array field shall be incorporated into study design, with the intent of documenting species and flight behavior of birds entering the project site and measuring elevation at which birds are flying. Special effort shall be made to collect the carcass of any bird observed colliding with project features or coming to the ground within the project boundaries, including recording Global Positioning Satellite (GPS) data. The Monitoring Study shall be subject to review and approval by the CPM, in consultation with USFWS, and shall be incorporated into the project's BRMIMP, and implemented by the Designated Biologist in coordination with the project owner, CPM, and USFWS. The study shall be implemented, for a period of not less than 2 calendar years (24 months) total, during the operational phase.
10. Duration of Formal Monitoring Study. The formal monitoring study shall continue for 2 years. Upon completion of the 2nd year of monitoring a final report summarizing the results shall be submitted to the CPM and USFWS.
11. Adaptive Management, if required by the CPM, shall be developed using results of the formal monitoring study in consultation with the USFWS.
12. Notification of Injury or Mortality for Sensitive Bird or Bat Species. The project owner or Designated Biologist shall notify the CPM within 24-hours if any state or federally listed or protected bird or bat species is detected during mortality searches (excluding Swainson's hawk and burrowing owl, which have their own reporting requirements, **BIO-10** and **BIO-12**). The report shall include the number and type of species subject to mortality or injury, photos and the location of the detection. Upon receiving notification, the CPM, in coordination with USFWS and CDFW, will provide guidance for further action as appropriate to prevent significant impact to the species.
13. Reporting and Disposition of Protected Species Carcasses. If a carcass of a golden eagle or any state or federally listed threatened or endangered species is found at any time, the project owner or Designated Biologist shall contact the CPM, CDFW, and USFWS within one working day of receipt of the carcass to report the mortality and for guidance on disposition of the carcass.

Verification: The project owner shall submit the draft Informal Monitoring Study (IMP) to the CPM for review and approval and to the USFWS for review and comment at least 45 days prior to start of operation. The project owner shall provide the final IMP to the CPM, and USFWS at least 7 days prior to start of operation.

The results of the IMP shall be submitted to the CPM in quarterly reports. The Annual Report shall be subject to review and approval by the CPM in consultation with USFWS. The project owner shall submit revisions within 30 days of receiving written comments from the CPM.

If, at the direction of the CPM, a formal 2-year monitory study is determined necessary (in consultation with USFWS), the project owner shall submit the draft Avian and Bat Monitoring Study to the CPM for review and approval, and to USFWS for review and comment, at least 90 days prior to implementation. The project owner shall provide the final B Avian and Bat Monitoring Study to the CPM and USFWS at least 30 days prior to implementation.

The results of the formal monitoring study shall be submitted to the CPM in quarterly reports. The Annual Report shall be subject to review and approval by the CPM in consultation with USFWS. The project owner shall submit revisions within 30 days of receiving written comments from the CPM.

The project owner shall submit copies of all written or electronic communications from USFWS regarding the status of the SPUT or any related requirements to the CPM within 30 days of receipt. This includes any follow-up actions required by the project owner as specified by USFWS.

5.2.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2).

MM BIO-1 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.

MM BIO-2 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.

MM BIO-3 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.

MM BIO-4 Trash.

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

MM BIO-5 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.

MM BIO-6 Waterways. Cleared or pruned vegetation, woody debris (including chips), and loose or exposed soil, must be disposed of in a manner to ensure that these materials do not enter surface water or a water feature.

MM BIO-7 Wildlife Entrapment. Inspect pipes, culverts and other construction material and equipment for wildlife prior to moving them. **Should wildlife become trapped, a qualified biologist shall remove and relocate the animal to a safe location. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.**

MM BIO-8 Wildlife Sighting. No wildlife or plant species will be handled or removed from activity areas.

MM BIO-9 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.

MM BIO-10 Herbicides. 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.

MM BIO-11 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 avoid take of state or federally listed species** to facilitate salvage or seed collection.

MM BIO-12 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.

Within work areas identified as suitable BNLL habitat as described above, 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-days **of BNLL** 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 construction 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).

Within work areas identified as suitable BNLL habitat as described

above. A longer **multi-season** 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 **permanent** 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 September 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 during surveys or incidental observations, prior to any activities starting or resuming (whichever applies) within 50 feet distance of the detection, in that measures to ensure complete avoidance of any project related impacts to BNLL must be implemented. These measures must at a minimum include installation of appropriate signage, on site monitoring by approved qualified biologists during all ground disturbing activities within 50 feet of the detection, and consultation with the USFWS and the CDFW to develop a BNLL avoidance plan, which must then be implemented.

~~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.

MM BIO-13 San Joaquin Kit Fox, America 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:

1. If signs of Burrowing Owl or American Badger are identified on-site, **CDFW shall be notified, and** 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:~~

- ~~a. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;~~
- ~~b. Type of scope to be used and appropriate timing of scoping to avoid impacts;~~
- ~~c. 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).

~~d. 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);~~

2. 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 **USFWS and/or** CDFW. If required buffers are not possible to protect the species, then a confer with CDFW **and USFWS** 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) and **appropriate USFWS permit.**

American Badger/San Joaquin Kit Fox:

- a. Potential or Atypical den—50 feet
- b. Known den—100 feet
- c. 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:

- a. 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.
- b. 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.
- c. 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), then work shall stop and CDFW and/or USFWS should be contacted to avoid take. 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.

- d. 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.
- e. If a the minimum 50 or 500- foot no disturbance buffer cannot be maintained, then consultation with USFWS and/or CDFW is warranted to determine if the work activities can avoid take or if authorization is necessary as described below.

MM BIO-14 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.

MM BIO-15 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 (**SJAS**), 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.

MM BIO-16 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.

MM BIO-17 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 **and identify any additional nests.**

MM BIO-18 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.

MM BIO-19 Western Red Bat Tree Removal Measures. To avoid and minimize impacts to western red bat (*Lasiurus blossevillii*) during tree removal, the following measures shall be implemented:

1. A qualified bat biologist shall conduct pre-construction surveys for roosting bats within 200 feet of the project area at least 15 days prior to tree removal. The biologist shall assess trees for potential roosting habitat, including foliage roosts and crevices. If no suitable roosting habitat is identified, tree removal may proceed without further measures for bats. If habitat is present, additional measures shall be required, as detailed below.
2. If Western red bat are present to minimize disruption, tree removal should be scheduled outside of the bat maternity season (March 1 – August 31) and peak torpor period (December – February) whenever possible. If tree removal must occur during the maternity season, a qualified bat biologist shall confirm the absence of active maternity roosts before proceeding. If tree removal must occur in winter, a hibernation survey shall be conducted to assess bat occupancy and determine appropriate mitigation measures.
3. If potential roosting habitat is present, tree removal shall occur in two phases to encourage bat relocation.

4. During the first phase, lower tree limbs shall be trimmed in the evening after 5:00 PM to encourage bats to abandon the roost. The trees shall be left standing overnight to allow remaining bats to vacate.
5. During the second phase, full tree removal shall take place the following morning to prevent bats from returning. Tree cutters shall inspect trees immediately before felling to ensure no bats remain.
6. If bats are detected, passive exclusion techniques shall be used, such as installing one-way bat cones or netting over roost openings at least three days before removal, allowing bats to exit but not return. Trees with confirmed roosts shall be removed incrementally, beginning with non-roost trees nearby to encourage natural dispersal.
7. To prevent winter roosting, leaf litter removal shall be conducted before the cold months to discourage bats from using it as a hibernation site. If trees must be removed between December and February, a qualified bat biologist will assess occupancy and recommend exclusion measures if needed. A qualified bat biologist shall monitor tree removal activities and document any observed bat presence. A post-removal survey report shall be submitted to the appropriate regulatory agencies, detailing survey findings, mitigation measures, and any observed bat activity.

MM BIO-20 Biological Monitor During Construction. A biological monitor will be onsite during ground disturbing activities, or other activities with the potential to impact sensitive biological resources, in order to minimize impacts to sensitive biological resources. Before the start of work each morning, the biological monitor will check under all equipment and stored supplies left in the work area overnight near suitable habitat for listed species with a potential to occur in the area. The monitor will have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel, as appropriate, if construction activities are likely to impact sensitive biological resources. The biological monitor will document monitoring activities in a daily log summarizing construction activities and environmental compliance.

5.2.7 References

- Airola et al., 2016 – Airola, D. A., Young, L. S., & Meese, R. J. Tricolored Blackbird breeding status in the grassland-dominated region of the Sierra Nevada, California. *Central Valley Bird Club Bulletin*, 19(4), 79–106. pp. 104-105.
- Audubon 2012 – Open Vertical Pipes are Death Traps for Birds and Other Wildlife. Available at: <https://www.audubon.org/news/open-vertical-pipes-are-death-traps-birds-and-other-wildlife-0>. Accessed on: December 6, 2024.
- Audubon 2024 – Mendota Wildlife Area. Accessed on August 12, 2024. Accessed online at:

<https://gis.audubon.org/portal/apps/dashboards/ab402cba1acc461d924783cf0f5e181c#site=179>

Audubon California 2025 – Tricolored Blackbird. Accessed on: January 29, 2025.

Accessed online at: <https://ca.audubon.org/birds-0/tricolored-blackbird>

Baldwin et al. 2012 – Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (Eds.). The Jepson Manual: Vascular Plants of California. (2nd ed.). University of California Press.

BCI 2025 – Bat Conservation International (BCI), Western Red Bat Data Sheet.

Accessed February 2025. Accessed online at:

<https://www.batcon.org/bat/lasiurus-frantzii/>

Biological Diversity and Wild Nature Institute 2014 – A Petition to List the Tricolored Blackbird (*Agelaius tricolor*) as Endangered under the California Endangered Species Act and Request for Emergency Action to Protect the Species. 351 California St., Suite 600, San Francisco, CA 94104. Accessed online at: https://biologicaldiversity.org/species/birds/tricolored_blackbird/pdfs/Petition_2014.pdf?_gl=1*1j5vzbj*_gcl_au*MjEzOTI4MDU2MS4xNzM4MTAyNjEw

Bumble Bee Watch 2025. Crotch bumble bee. Accessed on January 29, 2025.

Accessed online at: <https://www.bumblebeewatch.org>

Calflora 2023 – Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals. [web application]. Berkeley, California: The Calflora Database [a non-profit organization]. Accessed: December 18, 2023. Accessed online at: <https://www.calflora.org/>

CalHerps 2023 – CaliforniaHerps.com 2023. A Guide to the Amphibians and Reptiles of California. San Joaquin Coachwhip - *Masticophis flagellum ruddocki*. Accessed on: February 12, 2023. Accessed online at:

<https://californiaherps.com/snakes/pages/c.f.ruddocki.html>

CDFA 2025 – California Department of Food and Agriculture (CDFA). Accessed January 2025 Accessed online at:

https://www.cdfa.ca.gov/plant/IPC/encycloweedia/wininfo_weedratings.html

Cal-IPC 2025 – California Invasive Plant Council (Cal-IPC). California Invasive Plant Inventory. Accessed January 2025. Accessed at: www.cal-ipc.org

CDFG 1993 – California Department of Fish and Wildlife (CDFG). 5-Year Status Review: Swainson's Hawk (*Buteo swainsoni*).

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=133622>

CDFG 1994 – California Department of Fish and Game. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. November 1. Available at:

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83992&inline>

- CDFW 2000 – California Department of Fish and Wildlife (CDFW). California Wildlife Habitat Relationships System. California Interagency Wildlife Task Group. Coachwhip. Edited by R. Duke and E.C. Beedy. Accessed on February 15, 2024. Accessed online at:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=2755>
- CDFW 2015 – California Department of Fish and Wildlife (CDFW). Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015. Available at:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=99310&inline>
- CDFW 2019a – California Department of Fish and Wildlife (CDFW). Areas of Conservation Emphasis. Online version updated December 14, 2023. Accessed October 14, 2024. Accessed online at:
<https://wildlife.ca.gov/Data/Analysis/Ace#523731769-overview>.
- CDFW 2019b – California Department of Fish and Wildlife (CDFW). ACE Dataset Fact Sheet, Terrestrial Connectivity. Originally Published 2017. Updated 2019.
- CDFW 2023 – California Department of Fish and Wildlife (CDFW). Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. Available at:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inline>
- CDFW 2023a – California Department of Fish and Wildlife (CDFW). VegCAMP Natural Communities List. Accessed on January 30, 2024. Available at:
<https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/List>
- CDFW 2024 – California Department of Fish and Wildlife (CDFW). Mendota Wildlife Area. Last updates: July 20, 2017. Accessed February 15, 2024. Accessed online at <https://www.wildlife.ca.gov/Lands/Places-to-Visit/Mendota-WA>
- CDFW 2025 – California Department of Fish and Wildlife (CDFW). Golden Eagles in California. Accessed January 2025. Accessed online at:
<https://wildlife.ca.gov/Conservation/Birds/Golden-Eagles>
- CEC 2025c – California Energy Commission (TN 261723). Report of Conversation with US Fish and Wildlife Service Re Migratory Bird Presence and Approach at the Proposed Project Site, dated February 12, 2025. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Center for Biological Diversity et al. 2024 – Center for Biological Diversity, Defenders of Wildlife, Burrowing Owl Preservation Society, Santa Clara Valley Audubon Society, Urban Bird Foundation, Central Valley Bird Club, San Bernardino Valley Audubon Society. 2024. Petition Before the California Fish and Game Commission to List the California Populations of the Western Burrowing Owl (*Athene cunicularia hypugaea*) as Endangered or Threatened Under the California Endangered Species Act. Available at:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=221396&inline>

- CNDDDB 2023 – California Natural Diversity Database (CNDDDB). RareFind 5. California Department of Fish and Wildlife [Version 5.3.0], dated December 1, 2023. Accessed on: December 14, 2023
- CNDDDB 2024. California Natural Diversity Database (CNDDDB), Rarefind 5. California Department of Fish and Wildlife [Version 5.3.0], dated November 1, 2024. Accessed on: November 8, 2024.
- CNPS 2023 – California Native Plant Society. Rare Plant Inventory, *Atriplex coronata* var. *vallicola*. Rare Plant Inventory (online edition, v9.5). Accessed December 18, 2023. Accessed online at: <https://rareplants.cnps.org/Plants/Details/210>
- CNPS 2024 – Calscape. Available at: [https://calscape.org/Malacothamnus-aboriginum-\(Indian-Valley-Bushmallow\)](https://calscape.org/Malacothamnus-aboriginum-(Indian-Valley-Bushmallow)). Accessed on November 8, 2024
- CNPS 2025 – California Native Plant Society. 2025. A Manual of California Vegetation Online. Accessed on: January 21, 2025. Accessed online at: <https://vegetation.cnps.org>
- CSU Stanislaus 2023 – California State University Stanislaus. Endangered Species Recovery Program. Lost Hills crownscale (*Atriplex vallicola*). Accessed on December 18, 2023. Accessed online at: <https://esrp.csustan.edu/speciesprofiles/profile.php?sp=atva>. City of Elk Grove 2010 – Chapter 16.130, Swainson’s Hawk Impact Mitigation Fees. Available at: https://saclafco.saccounty.gov/SphereofInfluenceInformation/Documents/K_99_FEIR/ElkGroveOrdinance.pdf#search=swainson%27s%20hawk
- Chung-MacCoubrey 1996 –Chung-MacCoubrey, A. L. Grassland bats and land management in the Southwest. In Ecosystem disturbance and wildlife conservation in western grasslands: A symposium proceedings (pp. 54–63).
- Cypher et al 2013 – Cypher, B. L., S. E. Phillips, and P. A. Kelly. 2013. Quantity and distribution of suitable habitat for endangered San Joaquin kit foxes: conservation implications. *Canid Biology & Conservation*. 16(7):25-31. Accessed online at: https://www.canids.org/app/images/journal/16/san_joaquin_kit_fox_habitat_suitability.pdf
- Dechant et al 1999 – Dechant, Jill A.; Sondreal, Marriah L.; Johnson, Douglas H.; Igl, Lawrence D.; Goldade, Christopher M.; Rabie, Paul A.; and Euliss, Betty R., "Effects of Management Practices on Grassland Birds: Burrowing Owl". USGS Northern Prairie Wildlife Research Center. Paper 123. Accessed online at: <http://digitalcommons.unl.edu/usgsnpwrc/123>
- Diehl, et. al. 2021 – Diehl, Robert, Bruce Robertson, Karl Kosciuch. Investigating the “Lake Effect” Influence on Avian Behavior From California’s Utility-Scale Photovoltaic Solar Facilities. California Energy Commission. Publication Number: CEC-500-2024-055. Accessed online at: <https://www.energy.ca.gov/sites/default/files/2024-06/CEC-500-2024-055.pdf>

- DOC 2015 – California Department of Conservation, Division of Land Resource Protection (DLRP), Farmland Mapping and Monitoring Program (FMMP). California Farmland Conversion Report 2015. Available at: https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2010-2012/FCR/FCR%202015_text_only.pdf.
- Dooling & Popper 2007 – Dooling R. J., and A. N. Popper. The effects of highway noise on birds. Report to the California. Department of Transportation, contract 43AO139. California Department of Transportation, Division of Environmental Analysis, Sacramento, California, USA.
- eBird 2024 – eBird. Yellow-bellied Blackbird (*Chrysomus icterocephalus*). Accessed 2024. Accessed online at <https://ebird.org/species/yehbla>
- Emlen, J.T. 1974. An urban bird community in Tucson, Arizona: Derivation, structure, and regulation. Condor 76:184-197.
- Estep 2011 – Estep Environmental Consulting. 2011. (TN 260922). The Distribution and Abundance of Nesting Swainson's Hawks in the Vicinity of the Proposed RE Tranquillity [sp] LLC Solar Generation Facility. Available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Estep 2013 – Estep Environmental Consulting. 2013. (TN 260919). Swainson's hawk and Other Raptor Foraging Use of Solar Array Fields within an Agricultural Landscape in Sacramento County. Available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Estep 2016 – Estep Environmental Consulting. 2016. (TN 260920). The Distribution and Abundance of Nesting Swainson's Hawks in the Vicinity of the Proposed RE Scarlet Solar Generation Facility. Available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>.
- Estep 2021 – Estep Environmental Consulting. 2021. (TN 260921). Swainson's Hawk and Other Raptor Foraging Use of Solar Array Fields Within an Agricultural Landscape in Sacramento County Year 2. Available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>.
- Fenn et al. 2003 – Fenn, M.E., Baron, J.S., Allen, E.B., Rueth, H.M., Nydick, K.R., Geiser, L., Bowman, W.D., Sickman, J.O., Meixner, T., Johnson, D.W., P. Neitlich. 2003. Ecological effects of nitrogen deposition in the western United States. Bioscience 53(4): 404-420.
- Fresno 2023 – Fresno County General Plan Background Report, General Plan Review and Revision Public Review Draft. April 2023. Accessed on January 19, 2025. Accessed online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr-background-report-2023-05-10.pdf>

- Fresno 2024. Fresno County General Plan Policy Document. General Plan Review and Revision. Final. February 2024. Accessed January 2025. Accessed online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- Fresno 2025. Fresno County Department History. Accessed on January 24, 2025. Accessed online at: <https://fresnocountyca.gov/Departments/Agricultural-Commissioner/About-Us>
- Fresno Irrigation District. 2011. Appendix A Reconnaissance Level Biological Survey Report (pages 1-26). Accessed on August 12, 2024. Accessed online at: https://usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=8433.
- Gervais et al. 2008 – Gervais, J. A., Rosenberg, D. K., & K. K. Barnes. Burrowing Owl (*Athene cunicularia*). In A. Poole (Ed.), The Birds of North America Online (No. 115). Cornell Lab of Ornithology. P. 222
- Gogol-Prokurat, M. 2014 – Essential Connectivity Areas – California Essential Habitat Connectivity [ds620]. Calif. Dept. of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Accessed on January 25, 2024. Accessed online at <http://bios.dfg.ca.gov>
- Google. 2024. Google Earth Pro. 202. Version 7.3.6. Imagery Date: 5/18/2024. Accessed February 2025.
- Holland 1986 – Holland, R. F. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA.
- Holmes, Aaron L., et al. 2003 – Burrowing Owl Nest Success and Burrow Longevity in North Central Oregon. Western North American Naturalist, vol. 63, no. 2, 2003, pp. 244–50. JSTOR, <http://www.jstor.org/stable/41717288>. Accessed January 28, 2025.
- Horvath et al 2009 – Horvath et al. 2009 – Horváth, G; G. Kriska; P. Malik; B. Robertson, Polarized light pollution: a new kind of ecological photopollution, Frontiers in Ecology and the Environment: Vol. 7, No. 6, pp. 317-325. Grinnell, J., and A. H. Miller. 1944. The Distribution of the Birds of California. Pac. Coast Avifauna No. 27. 608pp.
- H. T. Harvey & Associates, and HDR, Inc. 2021 – Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions. California Department of Transportation, Division of Environmental Analysis, Office of Biological Studies, Oct. 2021.
- Huso et al 2016 – Huso, Manuela, Dietsch, Thomas, and Nicolai, Chris, 2016, Mortality monitoring design for utility-scale solar power facilities: U.S. Geological Survey Open-File Report 2016-1087, 44 p. Accessed online at: <http://dx.doi.org/10.3133/ofr20161087>

- INaturalist 2025 – INaturalist. Blunt-nosed leopard lizard (*Gambelia sila*) observations and habitat suitability. Retrieved from iNaturalist database.
- IP 2024o – Intersect Power (TN 260643). Updated Project Description - Tracked Changes - December 2024, dated December 13, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024p – Intersect Power (TN 260669). Updated Incidental Take Permit - Volume 1, dated December 16, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024q – Intersect Power (TN 260670). Updated Incidental Take Permit - Volume 2, dated December 16, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024r – Intersect Power (TN 260671). Updated Incidental Take Permit - Volume 3, dated December 16, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024s – Intersect Power (TN 260673). Updated Incidental Take Permit - Volume 4, dated December 16, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2025b – Intersect Power (TN 261490). Updated Land Use Figures, dated January 31, 2025. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Jepson 2025 – Jepson Flora Project (Jepson) (Barbour and Major, eds.) [2025] Jepson eflora, Accessed on January 21, 2025. Accessed online at: <https://ucjeps.berkeley.edu/eflora/geography.html>
- Jones & Stokes 2006. Pacific Gas & Electric Company San Joaquin Valley operations and maintenance habitat conservation plan (includes updated Chapter 4 and Tables 5-3, 5-4 and 5-5, December 2007). December. (J&S 02- 067.) Sacramento, CA.
- Knopf and Rupert 1995 – Knopf, F.L., and J.R. Rupert. Habitats and habitats of Mountain Plovers in California. Condor 97:743-751.
- NWI 2023a – National Wetlands Inventory. Accessed on: Accessed on December 27, 2023. Accessed online at: <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>
- NatureServe 2008 – NatureServe. Threatened Amphibians of the World. P.16. Accessed online at: <https://www.natureserve.org/sites/default/files/1-taw-intro.pdf>
- Los Padres Forestwatch 2013. Crotch's bumblebee. Accessed on December 27, 2023. Accessed online at: <https://lpfw.org/our-region/wildlife/crotch-s-bumblebee/#Habitat%20and%20Ecology>.

- Osbourne et al 2008 – Osborne, J. L., Martin, A. P., Carreck, N. L., Swain, J. L., Knight, M. E., Goulson, D., Hale, R. J., & Sanderson, R. A. Bumblebee flight distances in relation to the forage landscape. *Journal of Animal Ecology*, 77(3), 406–415.
- Pardo et al. 2011 – M.E. Fenn, C.L. Goodale, L.H. Geiser, C.T. Driscoll, E.B. Allen, J. Baron, R. Bobbink, W.D. Bowman, C. Clark, B. Emmett, F.S. Gilliam, T. Greaver, S.J. Hall, E.A. Lilleskov, L. Liu, J. Lunch, K Nadelhoffer, S.S. Perakis, M.J. Robin-Abbott, J. Stoddard, K. Weathers, and R.L. Dennis (Pardo et. Al, 2011). Effects of nitrogen deposition and empirical nitrogen critical loads for ecoregions of the United States. *Ecological Applications* 21:3049-3082
- Patterson, J.W. 2012 – Evaluation of New Obstruction Lighting Techniques to Reduce Avian Fatalities. National Technical Information Services, Springfield, Virginia 22161. Accessed online at: <https://abcbirds.org/wp-content/uploads/2016/10/Evaluation-of-New-Obstruction-Lighting-Techniques-to-Reduce-Avian-Fatalities.pdf>
- Pearce et al 2016 – Pearce, D, J. Strittholt, T. Watt, and E.N. Elkind. A Path Forward: Identifying Least-Conflict Solar PV Development in California’s San Joaquin Valley. Accessed online at: <https://www.law.berkeley.edu/wp-content/uploads/2016/05/A-PATH-FORWARD-May-2016.pdf>.
- Pierson et al. 2006 – Pierson, E.D., W.E. Rainey and C. Corben. Distribution and status of Western red bats (*Lasiurus blossevillei*) in California. Calif. Dept. Fish and Game, Habitat Conservation Planning Branch, Species Conservation and Recovery Program Report 2006-04, Sacramento, CA 45 pp.
- RCI 2023w – Rincon Consultants, Inc. (TN 252974). Section 5-12 Biological Resources, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023gg – Rincon Consultants, Inc. (TN 253020). Appendix S Water Supply Assessment, dated November 7, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023hh – Rincon Consultants, Inc. (TN 253021). Appendix V Swainson’s Hawk Conservation Strategy, dated November 7, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023nn – Rincon Consultants, Inc. (TN 253034). Section 5-2 Land Use, dated November 7, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

- RCI 2023oo – Rincon Consultants, Inc. (TN 253035). Section 5-13 Water Resources, dated November 7, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023tt – Rincon Consultants, Inc. (TN 253534). Appendix R Species Observed and with Potential to Occur and 10-mile CNDDDB Darden Clean Energy, dated December 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023rr – Rincon Consultants, Inc. (TN 253038-1 through TN 253038-3). Appendix Q Biological Resources Assessment, dated November 7, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Rincon Consultants, Inc. (TN 256296). Data Request Response Set 4, dated May 10, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024z – Rincon Consultants, Inc. (TN 258571). CEC Data Request Response Set 6, dated August 20, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024bb – Rincon Consultants, Inc. (TN 258573). Data Response Set 6 - Appendix D REV 1 DR TSD-1 BRA Vol 2, dated August 20, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024cc – Rincon Consultants, Inc. (TN 258574). Data Response Set 6 - Appendix D REV 1 DR TSD-1 BRA Vol 1, dated August 20, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ww – Rincon Consultants, Inc. (TN 260662). CEC Supplemental Data Request Response Set 1, dated December 13, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Sawyer et al. 2009 — Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California.
- Spencer et al. 2010 – Spencer, W.D., P. Beier, K. Penrod, K. Winters, C Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. Accessed at: <https://consbio.org/reports/california-essential-habitat-connectivity-project-a-strategy-for-conservation-a-connected-california/>
- Stanford University 2024 – California Tiger Salamander. Stanford Conservation Program, Field Conservation Facility. Stanford, CA. Accessed on August 12, 2024. Accessed online at: <https://conservation.stanford.edu/science-management-0/species-risk/california-tiger-salamander>.

- The Wildlife Professional 2010 – The Wildlife Society. Harnessing Fire for Wildlife. Available at: <https://northlab.faculty.ucdavis.edu/wp-content/uploads/sites/195/2016/11/Harnessing-Fire-for-Wildlife-Wildlife-Professional-article.pdf>
- UC Berkeley 2016 – University of California Berkeley. Identifying Least-Conflict Solar PV Development in California’s San Joaquin Valley. May 2016. Accessed online at: <https://www.law.berkeley.edu/wp-content/uploads/2016/05/A-PATH-FORWARD-May-2016.pdf>
- USFWS 1998 – U.S. Fish and Wildlife Service (USFWS) Recovery Plan for Upland Species of the San Joaquin Valley, California. Region 1, Portland, Oregon. Accessed online at: https://ecos.fws.gov/docs/recovery_plan/980930a.pdf
- USFWS 2024 – U.S. Fish and Wildlife Service (USFWS). Pixley National Wildlife Refuge. Accessed February 15, 2024. Accessed online at: <https://www.fws.gov/refuge/pixley>
- USFWS 2023 – U.S. Fish and Wildlife Service (USFWS). Information for Planning and Consultation (IPaC) online project planning tool. Accessed on December 15, 2023. Accessed online at: <https://ecos.fws.gov/ipac/>
- USFWS 2023a. – U.S. Fish and Wildlife Service National Wetlands Inventory (NWI). Accessed on December 27, 2023. Accessed online at: <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>
- USFWS 2025a – Threats to Birds: Collisions. Accessed February 12, 2025. Accessed online at: <https://www.fws.gov/library/collections/threats-birds-collisions>.
- USFWS 2025b – U.S. Fish & Wildlife Service. Special Purpose Utility Permit (3-200-81). U.S. Department of the Interior. Accessed February 12, 2025. Accessed online at: <https://www.fws.gov/library/collections/threats-birds-collisions>
- USFWS ECOS 2023 – U.S. Fish and Wildlife Service Environmental Conservation Online System. [Updated January 26, 2024]. Accessed on January 31, 2024. Accessed online at: <https://ecos.fws.gov/ecp/species/5150>
- USGS 1978 – U.S. Geological Survey 1978. Hydrologic Unit Maps. Water-Supply Paper 2294. Available at: https://pubs.usgs.gov/wsp/wsp2294/pdf/wsp_2294.pdf
- USGS 2023 – U.S. Geological Survey. National Hydrography Dataset (ver. USGS National Hydrography Dataset Best Resolution (NHD) for Hydrologic Unit (HU) 12. Accessed on January 29, 2024. Accessed online at: <https://www.usgs.gov/national-hydrography/access-national-hydrography-products>
- WeatherSpark 2025. Climate and Average Weather Year Round in San Joaquin. Accessed on: January 21, 2025. Accessed online at: <https://weatherspark.com/y/1302/Average-Weather-in-San-Joaquin-California-United-States-Year-Round>

- Weiss 2006 – Weiss. Impacts of Nitrogen Deposition on California Ecosystems and Biodiversity. California Energy Commission, PIER Energy-Related Environmental Research. CEC-500-2005-165. Accessed online at: <https://www.energy.ca.gov/sites/default/files/2025-01/CEC-500-2025-005.pdf>
- Williams et al 2014 – Williams, P.H., R.W. Thorp, L.L. Richardson, and S.R. Colla. Bumble bees of North America: an Identification Guide. Princeton University Press. 208 pp.
- Westlands Water District GSA and County of Fresno GSA-Westside. 2022. Groundwater Sustainability Plan. July 2022. Accessed on August 2023. Accessed online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/water-and-natural-resources-division/westside-gsa>
- Xerces et al. 2018 – Xerces Society for Invertebrate Conservation Xerces Society for Invertebrate Conservation, Defenders of Wildlife, Center for Food Safety (Xerces et al.). A Petition to the State of California Fish and Game Commission to List the Crotch Bumble Bee (*Bombus crotchii*), Franklin’s bumble bee (*Bombus franklini*), Suckley Cuckoo Bumble Bee (*Bombus suckleyi*), and Western Bumble Bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act. pp. 37-38. Accessed on December 27, 2023. Accessed online at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=161902&inline>
- Xerces 2025 – Xerces Society for Invertebrate Conservation (Xerces). Crotch’s bumble bee (*Bombus crotchii*) – At-risk bumble bees. Accessed January 2025. Accessed online at: <https://xerces.org/endangered-species/species-profiles/at-risk-bumble-bees/crotch-bumble-bee>

5.3 Climate Change and Greenhouse Gas Emissions

This section describes the environmental and regulatory setting and potential impacts to the environment caused by the proposed project greenhouse gas (GHG) emissions. Unlike emissions of criteria and toxic air pollutants, which have regional and localized impacts, GHG emissions relate to the broader impact of global climate change.

5.3.1 Environmental Setting

Existing Conditions

Global warming associated with the "greenhouse effect" is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the Earth's atmosphere. The principal GHGs that contribute to global warming and climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), black carbon, and fluorinated gases (F-gases) (hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF₆]). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors.

Each GHG has its own potency and effect upon the Earth's energy balance, expressed in terms of a global warming potential (GWP), with CO₂ being assigned a value of one (1.0). Specifically, the GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given time relative to the emissions of 1 ton of CO₂. The larger the GWP, the more that a given gas warms the Earth compared to CO₂ over that time. The time usually used for GWPs is 100 years. The F-gases are sometimes called high-GWP gases because, for a given amount of mass, they trap substantially more heat than CO₂. The GWPs for these gases can be in the thousands or tens of thousands. The carbon dioxide equivalent (CO₂e) mass emission rate for a source is obtained by multiplying the mass of each GHG by the assigned GWP for that compound and then adding the results of this product together to obtain a single, mass emission rate in terms of CO₂e that represents the combined effects of the GHGs.

California Emissions Inventory

California is a contributor to global GHG emissions. The total gross California GHG emissions in 2021 were 381.3 million metric tons of CO₂-equivalent (MMTCO₂e) (CARB 2023). The largest category of GHG emissions in California is transportation, followed by industrial activities and electricity generation in state and out of state.

In 2021, the total gross U.S. greenhouse gas emissions were 6,340.2 MMTCO₂e, or 5,586.0 MMTCO₂e after accounting for sequestration from the land sector (U.S. EPA 2024). Nationwide GHG emissions in 2021 rebounded from 2020 levels that were lower than 2019 because of a sharp decline due to the impacts of the coronavirus (COVID-19) pandemic on fossil fuel combustion, related to travel and economic activity (CARB 2023, U.S. EPA 2024).

County of Fresno Municipal Emissions Inventory

In March 2024, Fresno Council of Governments (FCOG) published an estimated inventory of GHG emissions resulting from government operations during the 2019 calendar year. The County's total emissions for the source sectors analyzed were approximately 13,209,106 MTCO₂e in 2019. The GHG emissions are broken down by sector and source, which are unique to the operations of Fresno County. Out of the sectors analyzed, the transportation sector was the largest contributor to emissions in the 2019 inventory, with 44 percent of the County's total GHG emissions. Agriculture and residential and commercial building energy use sources were the second and third largest contributor of GHG emissions with 19 percent and 17 percent of total emissions, respectively. Emissions from industrial sources represent 13 percent of the inventory. Approximately 4 percent of the emissions result from waste management, including solid waste and wastewater treatment. Other emissions sources, such as fugitive emissions from consumer products, represent approximately 3 percent of the emissions inventory (FCOG 2024).

Decarbonization of California's Electricity Sector

The electricity sector in California has achieved substantial GHG emissions reductions through renewable and zero-carbon energy deployment. Moving forward, a clean, affordable, and reliable electricity grid will serve as a backbone to support deep decarbonization across California's economy. Decarbonizing the electricity sector is a crucial pillar of achieving carbon neutrality, and CARB anticipates that the role of electricity in powering the economy will continue to grow while electric loads increase (CARB 2022).

California continues to add zero-carbon energy resources to replace fossil-fuel generation and support growing demand. Moving to zero-carbon resources is critical to reducing GHG emissions and addressing the long-term impacts of climate change (CEC 2022). Renewable and zero-carbon sources of energy do not operate on-demand like traditional fossil fuel power plants. The growth of zero-carbon resources, especially solar resources, has shifted the reliability concerns from the peak hour (hour with the highest energy demand) to net peak hours (hours when energy demand minus wind and solar generation is largest). As solar capacity has grown in recent years, net peak has shifted to later in the day. Wind generation late in the day aids in meeting the shift to a later net peak (CEC 2022).

Peak demand times require dispatching generation plants with different fuels, and generation resources in the state are diverse. Wind and solar generation are part of the supply on most days. While the electricity sector is using less fossil fuel due to increasing amounts of renewables, existing fossil-fuel natural gas-fired generation will continue to play a critical role in grid reliability until other clean, dispatchable alternatives can be deployed at scale. Presently, fossil-fuel natural gas-fired power plants provide about 75 percent of the flexible capacity for grid reliability. As more renewable power enters the system, other resources such as storage and demand-side

management are essential to maintain reliability with high concentrations of renewables (CARB 2022).

Regulatory

Federal

U.S. EPA GHG Mandatory Reporting Program (40 CFR Part 98). This rule requires mandatory reporting of GHG emissions for industrial facilities and power plants that emit more than 25,000 MTCO₂e per year. The reporting program (40 CFR Part 98.300, Subpart DD) applies to electric and transmission distribution equipment that use high GWP gases, including SF₆, for insulation of electrical equipment. Currently, there are no federal regulations limiting GHG emissions from the types of sources that would occur with the proposed project. Circuit breakers and gas insulated switches related to electric power transmission and distribution may be sources of GHG subject to reporting due to the leakage of SF₆.

State

California Global Warming Solutions Act of 2006. In 2006, the state Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006), codified as Health and Safety Code, section 38500 and the following, which provided the initial framework for regulating GHG emissions in California. This law required CARB to design and implement GHG emissions limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. AB 32 also required CARB to implement a mandatory GHG emissions reporting program for major sources, which includes electricity generators, industrial facilities, fuel suppliers, and electricity importers.

CARB Scoping Plan. Part of the Legislature's direction to CARB under AB 32 was to develop a scoping plan that serves as a statewide planning document to coordinate the main strategies California will use to reduce GHG emissions that cause climate change. CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) in 2008 and released updates in 2014, 2017, and 2022. The CARB's Scoping Plan includes a range of GHG emissions reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based compliance mechanisms, such as the cap-and-trade program. In December 2007, CARB set the statewide 2020 emissions limit, defined as reducing emissions to 1990 levels, at 427 MMTCO₂e. The 2014 Scoping Plan adjusted the 1990 emissions estimate and the statewide 2020 emissions limit goal to 431 MMTCO₂e (CARB 2014). The 2017 Scoping Plan (CARB 2017a) demonstrates the approach necessary to achieve California's 2030 target, which is to reduce GHG emissions 40 percent below 1990 levels to 260 MMTCO₂e. On November 16, 2022, CARB published the 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022), which lays out a path to achieve targets for carbon neutrality by 2045.

Mandatory Reporting of Greenhouse Gas Emissions. AB 32 also required CARB to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions (Health and Safety Code, section 38530). CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Cal. Code Regs., tit. 17 §§ 95100 to 95163), which took effect January 2009, requires annual GHG emissions reporting from electric power entities, fuel suppliers, CO₂ suppliers, petroleum and natural gas system operators, and industrial facilities that emit at least 10,000 MTCO₂e per year from stationary combustion and/or process sources. No specific reporting requirements apply to electric power generation from solar PV and/or BESS resources.

Cap-and-Trade Program. CARB's cap-and-trade program (Health and Saf. Code, § 38562; 17 Cal. Code Regs., §§ 95801 to 96022) took effect January 1, 2012. The cap-and-trade program establishes a declining limit on major sources of GHG emissions by sector throughout California, and it creates economic incentives for sources to invest in cleaner, more efficient technologies. The current version of the regulation, effective April 2019, established the increasingly stringent compliance obligations for years 2021 to 2030. The cap-and-trade program applies to covered entities that fall within certain source categories, including first deliverers of electricity (such as fossil fuel power plants) and electrical distribution utilities; in this case, the project would obtain electrical service from PG&E. Covered entities in the cap-and-trade program, including PG&E, must hold compliance instruments sufficient to cover their actual GHG emissions, as set and verified through the CARB's Mandatory Reporting regulation. For the electricity supplied to the project from the grid, PG&E bears the GHG emissions compliance obligation under the cap-and-trade program for delivering electricity to the grid from its power plants and for making deliveries to end-users, such as the project, unless the project is otherwise a covered entity in the cap-and-trade program.

Executive Order B-30-15. On April 29, 2015, former Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to make it possible to achieve the previously stated goal of an 80 percent GHG emissions reduction below 1990 GHG emissions by 2050 (CARB 2017a).

Statewide 2030 GHG Emissions Limit. On September 8, 2016, SB 32, codified as Health and Safety Code, section 38566, extended California's commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030 (CARB 2017a).

Renewable Energy Programs. In 2002, California initially established the Renewables Portfolio Standard (RPS) with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and former Governor Schwarzenegger's Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the CARB's 2008 Scoping Plan. In April 2011, Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011) of the First Extraordinary Session was signed into law. SB X1-2 expressly applied the 33 percent

RPS by December 31, 2020, to all retail sellers of electricity and established renewable energy standards for interim years prior to 2020.

- Clean Energy and Pollution Reduction Act (Senate Bill 350, De León, Chapter 547, Statutes of 2015): Beginning in 2016, SB 350 took effect declaring it the intent of the Legislature to acknowledge Governor Brown's clean energy, clean air and greenhouse gas emissions reduction goals for 2030 and beyond. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.
- The 100 Percent Clean Energy Act of 2018 (Senate Bill 100, De León, Chapter 312, Statutes of 2018): Beginning in 2019, the RPS deadlines advanced to 50 percent renewable resources by December 31, 2026, and 60 percent by December 31, 2030. In addition, SB 100 establishes policy that renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity by December 31, 2045.
- Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020, Laird, Chapter 361, Statutes of 2022): Accelerates the timelines set forth in SB 100 to provide that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035, as specified.

Short-Lived Climate Pollutant Strategy. To best support the reduction of GHG emissions consistent with AB 32, CARB released the Short-Lived Climate Pollutant (SLCP) Strategy, under Health and Safety Code, section 39730, in March 2017. Health and Safety Code, section 39730, defined SLCPs as having lifetimes in the atmosphere ranging from "a few days to a few decades." Then beginning in 2017 under Health and Safety Code, section 39730.5, CARB was directed to set targets to reduce SLCP emissions 40 percent below 2013 levels by 2030 for CH₄ and HFCs and 50 percent below 2013 levels by 2030 for anthropogenic black carbon (CARB 2017b). The SLCP Strategy was integrated into the 2017 update to CARB's Scoping Plan.

To help meet the HFC reduction goal, California adopted Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5, Sections 95371, et seq.). The prohibited HFCs and their respective effective dates are listed in the regulation. In addition, on September 30, 2022, the Governor approved SB 1206, which would prohibit a person from offering for sale or distribution, or otherwise entering into commerce in the state, bulk HFCs or bulk blends containing HFCs that exceed the GWP limit of 2,200 beginning January 1, 2025, and lower GWP limits beginning January 1, 2030, and January 1,

2033. The bill does not restrict the authority of CARB to establish regulations lowering the maximum allowable GWP limits below the limits established by the bill.

Senate Bill SB 375. The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPO) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. FCOG was assigned targets of a 6 percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a 13 percent reduction in per capita GHG emissions from passenger vehicles by 2035 (CARB 2018). FCOG is the regional planning agency for Fresno County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. FCOG most recently prepared the 2018 Regional Transportation Plan and Sustainable Communities Strategy (2018 RTP/SCS) for the region. The plan quantified a 5 percent reduction by 2020 and a 10 percent reduction by 2035 (FCOG 2018).

In 2018, CARB accepted FCOG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve FCOG targets. Project consistency with the 2018 RTP/SCS would therefore support AB 32 and SB 32 GHG reduction goals. An updated 2022 RTP/SCS (FCOG 2022) was approved by the Fresno COG on July 28, 2022. The 2022 RTP/SCS comprehensively assesses all forms of transportation available in Fresno County as well as travel and goods movement needed through 2046. Implementation of the goals set forth in the 2022 RTP will help achieve the state health standards and climate goals associated with transportation impacts.

Executive Order B-55-18. On September 10, 2018, the same day he signed SB 100 into law, former Governor Brown issued Executive Order B-55-18 to achieve carbon neutrality, stating the governor's intention "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing greenhouse gas emissions." From the 2020 GHG limit of 431 MMTCO₂e, California will need to reduce statewide emissions another 170 million tons to meet its 2030 statutory target of 260 million tons per year (40 percent below 1990 levels). The state would need to cut annual emissions by a further 175 million tons to meet its 2050 goal (set by executive order) of 85 million tons per year (80 percent below 1990 levels).

Reducing SF₆ Emissions from Gas Insulated Switchgear. In early 2011, CARB adopted a regulation (17 CCR §§ 95350 to 95359) to reduce SF₆ emissions in gas insulated switchgear used in the electricity sector's transmission and distribution system as an early action measure pursuant to AB 32. SF₆ is an extremely powerful and long-lived GHG. The 100-year GWP of SF₆ is 22,800 (from IPCC Fourth Assessment Report), making it the most potent of the six main GHGs, according to the U.S. EPA. Because of its extremely high GWP, small reductions in SF₆ emissions can have a large impact on reducing GHG emissions, which are the main drivers of climate change. The regulation requires gas insulated switchgear owners to report SF₆ emissions annually and requires reducing losses of SF₆ over time, subject to annual emission rate limits. The maximum allowable emission rate started at 10 percent in 2011 and has decreased one percent per year since then. The limit reached one percent in 2020 and remained at that level going forward. However, data show that statewide SF₆ capacity is growing by one to five percent per year, which would increase the expected SF₆ emissions. In response to emerging technologies using lower or zero GWP insulators, CARB amended the regulation (Cal. Code Regs., tit. 17, §§ 95350 to 95359.1) in 2021 to further reduce GHG emissions from gas-insulated equipment (GIE). Key provisions of the amended regulation include a phase-out schedule in stages between 2025 and 2033 for new SF₆ GIE, coverage of other GHG beyond SF₆ used in GIE, and other changes that enhance accuracy of emissions accounting and reporting.

The California Climate Crisis Act (Assembly Bill 1279). Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022) establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced by at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO₂ removal solutions and carbon capture, utilization, and storage (CCUS) technologies. The CARB 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022) plans for the 2045 target set forth by AB 1279 and Executive Order B-55-18.

California Environmental Quality Act (CEQA) Guidelines for GHG Emissions. With the enactment of Senate Bill 97 (Dutton, Chapter 185, Statutes of 2007), the Governor's Office of Planning and Research was required by July 1, 2009, to prepare, develop, and transmit to the Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Those amendments to the CEQA guidelines became effective March 18, 2010, and were subsequently updated in December 2018 to further address the analysis of GHG emissions, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects. (See CEQA Guidelines, § 15064.4, subd. (a))

- The focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b))
- The impacts analysis of GHG emissions is global in nature and thus should be considered in a broader context. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b))
- Lead agencies should consider a timeframe for the analysis that is appropriate for the project. (See CEQA Guidelines, § 15064.4, subd. (b))
- A lead agency's analysis must reasonably reflect evolving scientific knowledge and state regulatory schemes. (See CEQA Guidelines, § 15064.4, subd. (b).)
- Lead agencies may rely on an adopted statewide, regional, or local plan in evaluating a project's GHG emissions. (See CEQA Guidelines, § 15064.4, subd. (b)(3))
- Lead agencies may analyze and mitigate the significant impact of GHG emissions as part of a larger plan for the reduction of greenhouse gases. (See CEQA Guidelines, § 15183.5, sub. (a))
- A project's incremental contribution to a cumulative GHG emissions effect may be determined not to be significant and the effects of the project to not be cumulatively considerable if the project complies with the requirements of the GHG emissions reduction strategy. (See CEQA Guidelines, §§ 15064, sub. (h)(3); 15130, sub. (d); 15183, sub. (b))
- In determining the significance of a project's impacts, the lead agency may consider a project's consistency with the state's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. (See CEQA Guidelines, § 15064.4, subd. (b)(3))
- The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently account for the project's incremental contribution to climate change. (See CEQA Guidelines, § 15064.4, subd. (c).)

Local

Fresno Council of Governments (FCOG). As discussed above, the FCOG developed the 2022 RTP/SCS as the region's strategy to fulfill the requirements of SB 375. The 2022 RTP/SCS establishes a development pattern for the region that, when integrated with the transportation network and other policies and measures, would reduce GHG emissions from transportation (excluding goods movement). Specifically, the 2022 RTP/SCS is a financially feasible plan that achieves health standards for clean air and

addresses climate goals set by the state. The 2022 RTP/SCS does not require local general plans, specific plans, or zoning be consistent with it but provides incentives for consistency for governments and developers. As discussed above under SB 375, FCOG updated the 2018 plan to the 2022 RTP and approved it on July 28, 2022.

San Joaquin Valley Air Pollution Control District (SJVAPCD). In August 2008, the SJVAPCD's Governing Board adopted the Climate Change Action Plan (SJVAPCD 2008). The Climate Change Action Plan directed the SJVAPCD Air Pollution Control Officer to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change.

In 2009, the SJVAPCD adopted the *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA and the District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA (SJVAPCD 2009a; 2009b).

Use of BPS was a method for CEQA streamlining, but the performance standards were not required. Projects implementing BPS could be determined to have a less than cumulatively significant GHG impact. Another option was to demonstrate a 29 percent reduction in GHG emissions from business-as-usual (BAU) conditions to determine that a project would have a less than cumulatively significant impact and be consistent with AB 32 2020 targets. The guidance does not limit a lead agency's authority in establishing its own thresholds for determining the significance of project-related GHG impacts (SJVAPCD 2009b).

Fresno County General Plan. There are no specific policies related to GHG emissions or climate change in Fresno County 2024 General Plan. The General Plan includes energy efficiency goals and policies applicable to new and existing housing. These would not apply to the Project.

Cumulative

The CEQA Guidelines indicate that the impact analysis for GHG emissions is global in nature, and the focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. The discussion under the "Existing Conditions" subsection describes the broader context of global climate change and provides information on statewide and local emissions.

5.3.2 Environmental Impacts

CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, greenhouse gas emissions.

5.3.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The applicant estimated GHG emissions for construction and operation using CalEEMod (version 2022.1.1.19) and spreadsheet tools. The applicant's estimates include GHG from the construction equipment, vendor and hauling truck trips, and worker vehicle trips, based on the proposed project including the 18-month and 36-month construction scenarios of concurrent activities (RCI 2023II). The applicant's overall GHG summary also relied on estimates of the electricity intensity of the water supply required for construction and potential SF₆ leaks (RCI 2023II).

In this analysis, staff reviewed revised GHG emissions estimates for construction and operation of the proposed project using CalEEMod (version 2022.1.1.19). Staff also reviewed the CalEEMod provided results for mobile sources, the LPG engines as stationary sources, and other uses of transportation fuels and energy (electricity) to provide landscaping, water supply, and solid waste disposal related to the operation and maintenance (O&M) building. Additional spreadsheet analysis quantifies the effects of indirect GHG emissions reductions due to the electricity produced from renewable energy.

Thresholds of Significance

Staff recommends a project-specific threshold for use in the Opt-In Certification program for non-fossil-fueled power plants. The proposed project would be a renewable energy project, designed to generate electricity exclusively from renewable resources. Because the proposed project would install solar PV and BESS energy generation facilities, staff would consider any net additional emission of GHG to potentially have a significant impact on the environment. This means if the project does not result in any

net additional emission of GHG, including GHG emissions from employee transportation, then staff would consider the project GHG emissions to cause no significant impact on the environment.

5.3.2.2 Direct and Indirect Impacts

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The proposed project would cause GHG emissions due to construction and O&M activities. Separate discussions appear for the different effects on GHG emissions: those caused by development activities, like construction and operations with maintenance and inspection; the effects of land use conversion; and indirect GHG emissions reductions due to the electricity produced from renewable energy.

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, and with the incorporation of the mitigation measure described below, the combined direct and indirect effects of the GHG emissions indicate that a net GHG reduction would occur primarily due to the emissions avoided by producing electricity from renewable energy. The impact would be less than significant with mitigation incorporated.

Table 5.3-1 summarizes the different project effects of construction; the table also includes the effects of indirect GHG emissions reductions due to the electricity produced from the solar PV and BESS facilities as renewable energy.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction activities would cause GHG emissions resulting from fossil-fuel combustion in the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Diesel fuel or gasoline would be used in mobilizing the heavy-duty construction equipment, site development and preparation, facility construction, and roadway construction. Over the 18-month and 36-month scenario durations of construction, total GHG emissions would amount to approximately 62,440 MTCO₂e and 75,498 MTCO₂e, respectively including all equipment and vehicle use, for all on-site and off-site activity needed to install the proposed project (RCI 2023II, staff's calculation removing the hydrogen facility construction); this also includes energy consumed to supply up to 1,100 acre-feet of water supplied to the site for dust control (RCI 2024ee; Updated Project Description). To capture the long-term effects of the one-time, short-term construction GHG emissions, this analysis averages the construction effects over a 35-year life of the project. On this basis, the overall construction GHG emissions amortized over 35 years would be equivalent to an annualized rate of 2,157 MT CO₂e per year for the 36-month construction period and 1,784 MT CO₂e per year for the 18-month construction period.

PG&E Utility Switchyard

The PG&E utility switchyard's short-term construction GHG emissions would not generate substantial greenhouse gas emissions, either directly or indirectly, and would not have a significant impact on the environment. Over the 18-month and 36-month scenario durations of construction, total GHG emissions associated with the PG&E Utility Switchyard would amount to approximately 6,665 MTCO₂e and 5,112 MTCO₂e, respectively including all equipment and vehicle use, associated with the utility switchyard (RCI 2023II). Construction vehicles and the supplies of transportation fuels used during construction of the PG&E utility switchyard are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels. Staff recommends Mitigation Measure (**MM**) **GHG-1**, which includes PG&E construction measures for GHG as described in Section 5.3.6 of this analysis, to further reduce GHG emissions from construction. Construction activities of the PG&E utility switchyard would conform to relevant programs and recommended actions detailed in CARB's Scoping Plan.

PG&E Downstream Network Upgrades

Construction activities would cause GHG emissions resulting from fossil-fuel combustion in the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Diesel fuel or gasoline would be used in mobilizing the heavy-duty construction equipment, site development and preparation, facility construction, and roadway construction. According to Data Request Responses Set 6, construction activities due to the downstream network upgrades are expected to take approximately 12 to 16 weeks; at any one location the construction would take between 2 and 3 weeks (RCI 2024z). The combined direct and indirect effects of the short-term emissions from the downstream network upgrades along with the emissions avoided by producing electricity from renewable energy results in an overall net GHG reduction would occur primarily due to the emissions avoided by producing electricity from renewable energy.

Operation— Less Than Significant with Mitigation Incorporated

Based on the analysis below, and with the incorporation of the mitigation measure described below, the combined direct and indirect effects of the GHG emissions indicate that a net GHG reduction would occur primarily due to the emissions avoided by producing electricity from renewable energy. The impact would be less than significant with mitigation incorporated.

Table 5.3-1 summarizes the different project effects of the O&M activities, including the sources of the emergency generators and fugitive losses of SF₆; the table also includes the effects of indirect GHG emissions reductions due to the electricity produced from the solar PV and BESS facilities as renewable energy.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation of the proposed project would cause GHG emissions from the following types of activities: worker motor vehicle trips; emergency generator testing; energy use (electricity) for the O&M building; required maintenance work; the electricity intensity of the O&M water supply; solid waste disposal; and SF₆ leaked from circuit breakers at the proposed substation site.

TABLE 5.3-1 PROJECT GHG EMISSIONS FOR CONSTRUCTION AND OPERATION

Emission Source	Annual Emissions (MTCO₂e/year)
Road and Fence Repair	30
Emergency Engine Testing (3)	12.2
Road Reconditioning	130
Solar Panel Washing	124
Vegetation and Pest Management	536
O&M Facility	47
BESS – Battery Cooling	17,415 ^a
SF ₆ – Step-up Substation	1,506 ^b
SF ₆ – PG&E Utility Switchyard	837 ^b
Total Operation	20,637
Construction Emissions	75,498 (duration of Construction for 36-months)
One-time Construction, if amortized over 35-year project life	2,157
Combined Effects of Operation and Construction	22,794
Annual Emissions Avoided by Producing Electricity averaged over 35-year project life ^c	-117,534
Total Net Emissions	-94,740

Source: Construction and O&M emissions sources from applicant activity (RCI 2023II) and Updated Project Description (RCI 2024hh and RCI 2024ii), EPA Emission Factors for GHG inventories (US EPA 2024b).

a The applicant has estimated battery cooling using refrigerant R-404A which will be prohibited for purchase in large scale commercial uses. See details in the text.

b Due to the CARB regulation 17 CCR §§ 95350 to 95359 SF₆ phase-out the estimate assumes that all circuit breakers would contain SF₆, circuit breakers in the later phases may not and these values are conservative.

c See more details under Emissions Avoided by Producing Electricity below.

Refrigerant Leakage

The BESS would be equipped with air conditioning for thermal management purposes. The refrigerant has been specified in the applicant's CalEEMod files as R-404A (RCI 2023II). In addition, the applicant assumed the use of R-134a and R-410A for other refrigeration and air conditioning needs in CalEEMod (RCI 2023II).

R-404A has a global warming potential (GWP) of 3,922. R-134a and R-410A have GWPs of 1,430 and 2,088 respectively. As discussed in more detail under criterion "b" of the

CEQA environmental checklist below, these high-GWP refrigerants would be prohibited per regulation Prohibitions on Use of Certain Hydrofluorocarbons (HFCs) in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5). Staff recommends Condition of Certification **GHG-1** to ensure the project would remain in compliance with the current HFCs prohibition. The project would be required to use refrigerants with lower GWPs to comply with the HFCs prohibition. Therefore, the estimated GHG emissions due to refrigerant leakage for BESS cooling and other refrigeration/air conditioning needs shown in **Table 5.3-1** above are conservative.

Vehicle Trips, Emergency Generators, and O&M Building and Equipment

Proposed project operations with maintenance and inspection of the solar PV facility, and BESS energy generation facility would use diesel fuel and gasoline for off-site vehicle trips for worker commutes, material deliveries, site security, and facility upkeep. Use of these fuels would cause GHG emissions from the vehicle trips, and GHG emissions would occur from occasional propane fuel combustion by the emergency generators. Other onsite GHG emissions would be caused by mobile cranes and landscaping, water supply, and solid waste disposal related to O&M building use and occupancy. For the vehicle trips and proposed project workforce of up to 16 full-time employees (12 employees at the Solar Facility and 4 employees at the BESS facility), three (3) emergency generators, the O&M building (10,400 square-feet), the emissions would be approximately 879 MTCO₂e per year.

Fugitive SF₆ Emissions from Gas-Insulated Equipment

The proposed project would add new sources of GHG with electrical power equipment that contains gas to provide thermal insulation or arc quenching. This gas-insulated equipment includes devices such as switchgear, switches, and circuit breakers within the proposed substations. Until an alternative insulating gas becomes commercially available, circuit breakers and gas-insulated switchgear would contain SF₆, a potent GHG. The SF₆ insulating gas could be expected to leak at small amounts annually over the life of the project. Federal and state-level mandatory reporting rules track SF₆ emissions, and the CARB Regulation for Reducing Greenhouse Gas Emissions from Gas-Insulated Equipment requires control and eventual replacement and phase-out of SF₆ with alternative gases having lower GWP.

Accordingly, the project would need to manage its use of SF₆ through inventory recordkeeping, proper handling, and planning for an eventual replacement with an alternative. The new phase out schedule begins in January 2025 with all switchgear needing to be SF₆ free by January 2033. CARB has developed a timeline for phasing out SF₆ equipment in California and created incentives to encourage owners to replace SF₆ equipment. The California Office of Administrative Law approved this rulemaking in December 2021 and the Resolution went into effect January 1, 2022 (CARB 2021).

CARB has implemented phasing requirements for the elimination of SF₆ from electrical equipment, including circuit breakers. While the analysis assumes that all circuit breakers would contain SF₆, circuit breakers in the later phases may not contain SF₆ and/or as circuit breakers are replaced, they would be replaced with non-SF₆ technology. As estimated in **Table 5.3-1** of this analysis staff assumed the maximum amount of SF₆ per circuit breaker and depending on the circuit breaker used, SF₆ content may be substantially less than assumed in **Table 5.3-1**. Therefore, GHG emissions reported for the Project are conservative.

Prior to the phase-out, emissions of SF₆ due to potential leaks are quantified as approximately 2,343 MTCO₂e per year, and these GHG emissions are included in the sum of other emissions due to operations (RCI 2023II).

Emissions Avoided by Producing Electricity

Some of the renewable power generated by the proposed project would displace power produced by carbon-based fuels that would otherwise be used to meet electricity demand. The power displaced is incremental power provided by generators elsewhere on the grid, typically from natural gas power plants.

The proposed solar PV and BESS energy generation facility, with a capacity of up to 1,150-megawatt (MW) solar photovoltaic (PV) facility (solar facility) and up to 4,600 MW-hour battery energy storage system (BESS) (RCI 2024ff). Some of the electricity produced would displace fuel-burning by California's flexible natural gas-fired resources or electricity otherwise imported to California. This would avoid GHG that could otherwise be emitted by fuel-burning generators. The rate of GHG emissions avoided would vary with the mix of generators and imported electricity displaced by the incremental supply generated by the proposed project. The least efficient and highest-emitting generators are normally turned down to accommodate additional renewable generation; in California, there is a single dominant dispatchable fuel (natural gas) (CEC 2019; CPUC 2022).

To estimate the emissions avoided by solar and battery energy produced by the project, this analysis assumes that the proposed solar PV and BESS energy generating facility would avoid the need to use fuel at a mix of flexible, dispatchable generating facilities using coal and natural gas. Combustion of natural gas and coal for power are of the greatest concern related to the generation of criteria pollutants and GHG emissions, therefore only fuel displacement of natural gas and coal due to electricity production were used. While the precise quantity of GHG emissions avoided by the proposed project would depend on the operations, the project has the potential to displace over 457,000 MTCO₂e per year based on the 2023 CA power mix (RCI 2024ii, page 7). Based on the assumption that the grid would become less carbon intensive in future years¹, the applicant estimated that the project has the potential to displace over 4,113,000

¹ The applicant conservatively assumed that carbon intensity of the grid would be zero in 2045 and beyond, while the 2021 SB 100 Joint Agency Report (available at: <https://www.energy.ca.gov/sb100>) and the 2022 Scoping Plan show direct GHG emissions of the grid would not be zero in 2045.

MTCO₂e of GHG emissions during 35-year project life (RCI 2024ii, page 8), which is equivalent to an average of about 117,534 MTCO₂e per year.

PG&E Utility Switchyard

The GHG emissions quantification in **Table 5.3-1** shows that for the PG&E utility switchyard emissions generated during O&M would be around 837 MTCO₂e, which would be considerably less than the quantity of avoided GHG emissions, and that the proposed Darden energy generation facility would lead to a net reduction in GHG emissions across the State's electricity system. The proposed project would contribute to meeting the State's GHG reduction goals under AB 32, and subsequent targets for 2030 and beyond, and would facilitate compliance with California's RPS.

CARB has implemented phasing requirements for the elimination of SF₆ from electrical equipment, including circuit breakers. While the analysis assumes that all circuit breakers would contain SF₆, circuit breakers in the later phases may not contain SF₆ and/or as circuit breakers are replaced, they would be replaced with non-SF₆ technology. As estimated in **Table 5.3-1** of this analysis staff assumed the maximum amount of SF₆ per circuit breaker and depending on the circuit breaker actually used, SF₆ content may be substantially less than assumed in **Table 5.3-1** of 837 MTCO₂e. Therefore, GHG emissions reported for the Project are conservative.

PG&E Downstream Network Upgrades

Operation and maintenance of the downstream network upgrades would be performed remotely by PG&E and therefore would result in minimal emissions from vehicle trips to and from the downstream network upgrades once construction is completed. No diesel generators or other nonelectric equipment would be used that result in GHG emissions.

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction— Less Than Significant with Mitigation Incorporated

Based on the analysis below, and with the incorporation of the mitigation measure described below, construction of the project would not conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases.

The GHG emissions quantification in this section illustrates that emissions generated during construction would be considerably less than the quantity of avoided GHG emissions, and that the project would lead to a net reduction in GHG emissions across the State's electricity system. Construction of the project would contribute to meeting the State's GHG reduction goals under AB 32, and subsequent targets for 2030 and beyond, and would facilitate compliance with California's RPS.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility and Generation-Intertie Line

The project's short-term construction GHG emissions would not interfere with the state's ability to achieve long-term GHG emissions reduction goals. Construction vehicles and the supplies of transportation fuels used during construction of the project are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels. Construction activities of the project would conform to relevant programs and recommended actions detailed in CARB's Scoping Plan.

PG&E Utility Switchyard

The PG&E utility switchyard's short-term construction GHG emissions would not interfere with the state's ability to achieve long-term GHG emissions reduction goals. Construction vehicles and the supplies of transportation fuels used during construction of the PG&E utility switchyard are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels. Construction activities of the PG&E utility switchyard would conform to relevant programs and recommended actions detailed in CARB's Scoping Plan. The PG&E Construction Measures for GHGs identify measures to reduce emissions during construction. Staff has concluded that these measures are sufficient to reduce emissions from construction activities. Staff recommends **MM GHG-1**, which includes PG&E Construction Measures to further reduce construction emissions.

PG&E Downstream Network Upgrades

Construction activities would cause GHG emissions resulting from fossil-fuel combustion in the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Diesel fuel or gasoline would be used in mobilizing the heavy-duty construction equipment, site development and preparation, facility construction, and roadway construction. According to Data Request Responses Set 6, construction activities due to the downstream network upgrades are expected to take approximately 12 to 16 weeks; at any one location the construction would take between 2 and 3 weeks (RCI 2024z). The downstream network upgrade's short-term construction GHG emissions would not interfere with the state's ability to achieve long-term GHG emissions reduction goals. Construction vehicles and the supplies of transportation fuels used during construction of the project are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels. Construction activities of the project would conform to relevant programs and recommended actions detailed in CARB's Scoping Plan.

Operation— Less Than Significant with Mitigation Incorporated

Based on the analysis below, and with the incorporation of the condition of certification described below, operation of the project would not conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases.

The GHG emissions quantification in this section illustrates that emissions generated during construction would be considerably less than the quantity of avoided GHG emissions, and that the project would lead to a net reduction in GHG emissions across the State's electricity system. Construction of the project would contribute to meeting the State's GHG reduction goals under AB 32, and subsequent targets for 2030 and beyond, and would facilitate compliance with California's RPS.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility and Generation-Intertie Line

The primary effect of the proposed project on GHG emissions would be the ability to produce electricity from renewable resources, which improves the supply of renewable energy to end-use customers and facilitates achieving statewide renewable energy goals. Electricity from the solar PV and BESS energy generation facilities would be used to serve the needs of California's customers and would facilitate compliance with California's Renewables Portfolio Standard (RPS).

Other project GHG emissions due to operational activities would be subject to energy efficiency requirements and GHG reduction programs for mobile sources and suppliers of transportation fuels. For example, emissions from the operational workforce and from O&M activity and building use would be similar to those of other industrial development. The proposed project would comply with all applicable city and state green building standards measures, including California Code of Regulations, Title 24, Part 6, baseline standard requirements for energy efficiency, based on the 2022 Energy Efficiency Standards requirements, and the 2022 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Title 24, Part 11).

Achieving the renewable energy targets mandated by the RPS is critical to California achieving its GHG targets and statewide carbon neutrality as established by the California Climate Crisis Act of 2022 (AB 1279). The CARB 2022 Climate Change Scoping Plan identifies decarbonizing the electricity sector as a crucial pillar of achieving carbon neutrality (CARB 2022). The California Global Warming Solutions Act of 2006 (AB 32) and Senate Bill 32 (SB 32) of 2016 codified the GHG emissions target to 40 percent below the 1990 level by 2030. Subsequently, California's Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)], SB 350 set ambitious 2030 targets for energy efficiency and renewable electricity, among other actions aimed at reducing GHG emissions across the energy and transportation sectors. SB 350 also connects long-term planning for electricity needs with the state's climate targets, with ARB establishing 2030 GHG emissions targets for the electricity sector in general (CARB 2022). The current RPS was signed into law in September 2018 with Senate Bill 100 (SB 100), which established the goals of 50 percent renewable energy resources by 2026 and 60 percent renewable energy resources by 2030. SB 100 also sets a target for California to achieve a GHG-free energy supply by December 31, 2045.

The strategy for achieving the GHG reductions is set forth by the CARB's Scoping Plan. Overall, the electricity produced by the project would contribute to continuing GHG reductions in California's power supply. Because the project would use renewable energy resources to produce electricity, the avoided GHG emissions would be consistent with and would not conflict with California's GHG emissions reduction targets and the CARB's Scoping Plan that relies on achieving the RPS targets.

Refrigerant Prohibition

As mentioned above, the applicant assumed the use of refrigerant R-404A for BESS cooling, refrigerants R-134a and R-410A for other refrigeration and air conditioning needs in CalEEMod (RCI 2023II).

R-404A, R-134a and R-410A have GWPs of 3,922, 1,430 and 2,088 respectively. The regulation Prohibitions on Use of Certain Hydrofluorocarbons (HFCs) in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5) prohibits the use of R-404A in cold storage warehouses as of January 1, 2023. In addition, R-134a has been prohibited as of January 1, 2023 for all refrigerators. And refrigerants with a GWP of 750 or greater have been prohibited as of January 1, 2025 for residential and non-residential air-conditioning equipment (CARB 2021). Since these dates have passed, R-404A, R-134a, and R-410A will be prohibited from use.

Staff recommends Condition of Certification **GHG-1** to ensure the project would remain in compliance with the current HFCs prohibition, and the air-cooling units installed onsite would use non-prohibited refrigerant.

The operation of this project component would comply with all regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions, and the proposed project would not conflict with any applicable GHG management plan, policy, or regulation with the exception of using prohibited refrigerants for cooling the warehouse where the BESS would be stored and other cooling needs. This impact would be less than significant with the incorporation of COC **GHG-1**.

PG&E Utility Switchyard

The GHG emissions quantification in **Table 5.3-1** shows that for the PG&E utility switchyard emissions generated during O&M would be around 837 MTCO₂e which would be considerably less than the quantity of avoided GHG emissions, and that the proposed Darden energy generation facility (including all project components) would lead to a net reduction in GHG emissions across the State's electricity system.

CARB has implemented phasing requirements for the elimination of SF₆ from electrical equipment, including circuit breakers. While the analysis assumes that all circuit breakers would contain SF₆, circuit breakers in the later phases may not contain SF₆.

and/or as circuit breakers are replaced, they would be replaced with non-SF₆ technology. As estimated in **Table 5.3-1** of this analysis, staff assumed the maximum amount of SF₆ per circuit breaker and depending on the circuit breaker actually used, SF₆ content may be substantially less than assumed in **Table 5.3-1** of 837 MTCO_{2e}. Therefore, GHG emissions reported for the PG&E utility switchyard are conservative.

PG&E Downstream Network Upgrades

Operation and maintenance of the downstream network upgrades would be performed remotely by PG&E and therefore would result in minimal emissions from vehicle trips to and from the downstream network upgrades once construction is completed.

The GHG emissions generated during O&M of the downstream network upgrades would be considerably less than the quantity of avoided GHG emissions, and the proposed project generating facility would lead to a net reduction in GHG emissions across the State's electricity system. The primary effect of the proposed network upgrades on GHG emissions would be the ability to produce electricity from renewable resources, which improves the supply of renewable energy to end-use customers and facilitates achieving statewide renewable energy goals. These upgrades would serve the needs of California's customers and would facilitate compliance with California's Renewables Portfolio Standard (RPS).

Furthermore, no diesel generators or other nonelectric equipment would be used that result in GHG emissions.

5.3.2.3 Cumulative Impacts

Construction and Operation— *Less Than Significant with Mitigation Incorporated*

The impact analysis for GHG emissions is global in nature, and the project's GHG emissions are considered in the broad context of global climate change. The focus of this analysis is to disclose the project's effect on climate change, while presenting the quantity of GHG emissions. The State CEQA Guidelines provide that a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be significant and the effects of the project to not be cumulatively considerable if the project complies with the requirements of the state's long-term climate goals or strategies.

The proposed PV and BESS energy generation facilities would lead to a net reduction in GHG emissions across the State's electricity system, and the GHG emissions related to the project would not conflict with any plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Therefore, the project's GHG emissions would not be cumulatively considerable.

5.3.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.3-2 below details staff's determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "Staff Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.3-2 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
Federal	
Mandatory Reporting (40 CFR Part 98)	Not applicable. Project would not emit more than 25,000 MTCO _{2e} per year.
State	
Scoping Plan	Yes. The proposed PV and BESS energy generation facilities would provide electricity to facilitate compliance with California's RPS and would lead to a net reduction in GHG emissions across the State's electricity system.
CARB Mandatory Reporting	Not applicable. Project would not generate electricity using fossil fuels.
CARB Cap-and-Trade Program	Not applicable. Project would not emit GHG in quantities that could trigger cap-and-trade program applicability.
CARB SF₆ Reduction Requirements	Yes. The project would comply with GHG emissions reduction requirements through conformance with reporting and phase-out requirements of this regulation.
Short-Lived Climate Pollutant (SLCP) Strategy	Yes. The project would comply with GHG emissions reduction requirements through conformance with COC GHG-1 .
Local	
Fresno Council of Governments	
The 2020 RTP/SCS is a financially feasible plan that achieves health standards for clean air and addresses climate goals set by the state.	Yes. The proposed project would be consistent with these goals by reducing fossil fuel use by generating renewable energy, as well as through the implementation of the BESS facility that would store electrical energy for additional grid support during peak demand addressing climate goals set by the state.
San Joaquin Valley Air Pollution Control District	
The Climate Change Action Plan directed the SJVAPCD Air Pollution Control Officer to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of	Yes. The Project would generate solar energy that would supplement PG&E's requirement to increase its renewable energy procurement in accordance with SB 100 targets. Therefore, the proposed project would not conflict with the 2022

TABLE 5.3-2 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
project-specific GHG emissions on global climate change.	Scoping Plan and GHG impacts would be less than significant.
Fresno County General Plan	
The General Plan includes energy efficiency goals and policies applicable to new and existing housing.	Not applicable. Project would not add to new or existing housing and that could trigger program applicability.

5.3.4 Conclusions and Recommendations

As discussed above, the project would have a less than significant impact with mitigation incorporated related to climate change and greenhouse gas emissions and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection “5.3.5 Proposed Conditions of Certification” below.

GHG emissions associated with project components outside of CEC’s jurisdiction, such as the PG&E Utility Switchyard and PG&E Downstream Network Upgrades to be considered for permitting by CPUC, would be further reduced with the inclusion of MMs.

5.3.5 Proposed Conditions of Certification

GHG-1 Prior to the start of construction the project owner must demonstrate that the project would use refrigerants that comply with the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5, Sections 95371, et seq.) in all onsite cooling/refrigeration/air conditioning units.

Verification: To ensure compliance with this condition the project owner must identify and confirm the compliant refrigerant cooling fluid installation, along with an estimated annual greenhouse gas emissions in metric tons of CO₂-equivalent (MTCO_{2e}) to be submitted to the CEC CPM for verification, within 30 days prior to installation of HVAC. Once confirmed and approved by the CEC CPM, this verification is considered complete.

5.3.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). The measures are necessary for climate change and greenhouse gas emissions.

MM GHG-1

- 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 preconstruction 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.

5.3.7 References

- CARB 2014 – California Air Resources Board (CARB). First Update to the Climate Change Scoping Plan. Dated May 2014. Accessed on December 12, 2024. Available online at: https://ww3.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf
- CARB 2017a – California Air Resources Board (CARB). 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target. Dated November 2017. Accessed on December 12, 2024. Available online at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf
- CARB 2017b – California Air Resources Board (CARB). Short-Lived Climate Pollutant Reduction Strategy. Dated March 2017. Accessed on December 12, 2024. Available online at: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf

- CARB 2018 – California Air Resources Board (CARB). SB 375 Regional Plan Climate Targets. Dated March 2018. Accessed on December 12, 2024. Available online at: <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/sb-375-regional-targets>
- CARB 2020 – California Air Resources Board (CARB). Public Hearing to Consider the Proposed Amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear. Dated July 2020. Accessed on December 31, 2024. Available online at: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/sf6/isor.pdf>
- CARB 2021 – CARB Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation. Approved on December 29, 2021. Effective January 1, 2022. Accessed on January 6, 2025. Available online at: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hfc2020/frorevised.pdf>
- CARB 2022 – California Air Resources Board (CARB). 2022 Scoping Plan for Achieving Carbon Neutrality. Dated November 16, 2022. Accessed on December 12, 2024. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf
- CARB 2023 – California Air Resources Board (CARB). California Greenhouse Gas Inventory for 2000-2021 — by Category as Defined in the 2008 Scoping Plan. Dated December 13, 2023. Accessed on December 12, 2024. Available online at: https://ww2.arb.ca.gov/sites/default/files/2023-12/ghg_inventory_scopingplan_sum_2000-21.pdf
- CEC 2019 – California Energy Commission (CEC). Staff Report. “Estimated Cost of New Utility-Scale Generation in California: 2018 Update.” CEC-200-2019-500. Dated May 2019. Accessed on December 12, 2024. Available online at: <https://www.energy.ca.gov/sites/default/files/2021-06/CEC-200-2019-005.pdf>
- CEC 2022 – California Energy Commission (CEC). Final 2021 Integrated Energy Policy Report (IEPR), Volume II - Ensuring Reliability in a Changing Climate. Dated February 17, 2022. Accessed on December 12, 2024. Available online at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=241583>
- CPUC 2022 – California Public Utilities Commission (CPUC). Greenhouse Gas and Criteria Pollutant Accounting Methodology for use in Load-Serving Entity Portfolio Development in 2022 Integrated Resource Plans. Dated July 2022. Accessed on December 12, 2024. Available online at: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2022-irp-cycle-events-and-materials/clean-system-power-calculator-documentation.pdf>
- Di Vittorio and Simmonds 2019 – Di Vittorio, A., and M. Simmonds. California Natural and Working Lands Carbon and Greenhouse Gas Model (CALAND), Version 3, Technical Documentation. Dated June 2019. Accessed on December 23, 2024.

Available online at: https://resources.ca.gov/CNRALegacyFiles/wp-content/uploads/2019/06/caland_technical_documentation_v3_june2019.pdf

- Fresno 2024 – Fresno County General Plan Policy Document. Dated February 2024. Accessed in January 2025. Available online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- FCOG 2018 – Regional Transportation Plan Sustainable Communities Strategy 2018-2042. Dated July 26, 2017. Accessed in December 2024. Available online at: <https://fresnocog.wpenginepowered.com/wp-content/uploads/2017/02/2018-RTP-Cover-Intro-table-of-contents-etc.Final-Draft.pdf>
- FCOG 2022 – 2022 Regional Transportation Plan Sustainable Communities Strategy. Adopted July 28, 2022. Accessed in December 2024. Available online at: <https://www.planfresno.com/planfresno/uploads/2022/06/RTP-SCS-Cover-and-Introduction-pages.pdf>
- FCOG 2024 – Fresno Council of Governments, Priority Climate Action Plan, 2019 Baseline Year Narrative Report. Adopted March 2024. Accessed on January 6, 2025. Available online at: https://www.fresnocog.org/wp-content/uploads/2024/07/Fresno-COG-PCAP_030124_-FINAL-reduced-size-file.pdf
- RCI 2023ll – Rincon Consultants, Inc. (TN 253031-1 through TN 253031-4). Appendix N Air Quality and Greenhouse Gas Emissions Study. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024z – Rincon Consultants, Inc. (TN 258571). CEC Data Request Response Set 6. Dated August 20, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ee – Rincon Consultants, Inc. (TN 259509). Updated Darden Clean Energy Project Description. Dated October 9, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ff – Rincon Consultants, Inc. (TN 259510). Updated Darden Clean Energy Project Description_Redline. Dated October 9, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024hh – Rincon Consultants, Inc. (TN 260649). Supplemental Data Response Set 1- Appendix A SUP DR AQ-2 and Appendix B SUP DR AQ-3. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ii – Rincon Consultants, Inc. (TN 260654). Supplemental Data Response Set 1 - Appendix H SUP DR GHG-1 and Appendix I SUP DR GHG-2. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

SJVAPCD 2008 – Climate Change Action Plan. Dated November 2008. Accessed in December 2024. Available online at: <https://www.valleyair.org/Programs/CCAP/CAPP%20Staff%20Report%202008Nov12.pdf>

SJVAPCD 2009a – Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA. Adopted December 17, 2009. Accessed in December 2024. Available online at: <https://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20%20Dec%2017%202009.pdf>

SJVAPCD 2009b – Final Staff Report Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act. Adopted December 2009. Accessed in December 2024. Available online at: <https://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%2017%202009.pdf>

U.S. EPA 2024 – U.S. Environmental Protection Agency (U.S. EPA). Inventory of U.S. Greenhouse Gas Emissions and Sinks. Accessed on December 16, 2024. Available online at: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

5.4 Cultural and Cultural Tribal Resources

5.4.1 Environmental Setting

This section assesses the potential impacts of the construction and operation of the proposed project to cultural and tribal cultural resources.

Existing Conditions

The applicant's appropriately qualified consultants prepared a confidential Cultural Resources Technical Report (Ogaz et al. 2024) that is the basis for Section 5.1 Cultural Resources and Tribal Cultural Resources in the Opt-In Application (RCI 2023t). The Opt-In application adequately provides an environmental setting and regulatory setting for the project and thus that information is only summarized here.

The project site is in western Fresno County in a rural, agricultural area. It is east of Interstate 5 (I-5), near the junction with State Route (SR) 33 and north of the Harris Ranch stockyards at the junction of I-5 and Fresno Coalinga Road (SR 145). More specifically, the proposed facility would be north of W Mount Whitney Avenue. Prior to agricultural development in the region, Fresno Slough carried water from Tulare Lake and the Kings River to join the San Joaquin River near present-day Mendota. The slough, well north of the project site, was important for providing potable water and the wetlands would have provided key resources for Native Americans. (Ogaz et al. 2024, pp. 21–23; RCI 2023t, p. 5.1-1).

The project is in the San Joaquin Valley, an asymmetrical structural trough underlain by thick deposits of Quaternary alluvium eroded from the surrounding mountains. The Quaternary geologic era began 2.6 million years ago and is divided into the Pleistocene and the Holocene (Meyer et al. 2010, p. 9). Soils in the solar facility are generally from the Tranquillity series, consisting of very deep, somewhat poorly drained soils on fan skirts as well as soils from the Ciervo, Cerini, and Calfax series consisting of very deep moderately well drained soils on fan skirts. These soils are formed in alluvium derived from calcareous sedimentary rock. Slopes are generally 0–2 percent. The proposed gentle line would have soils from the Ciervo and Cerini series as well as Panoche series soils which are also well drained soils on alluvial fans. (NRCS 2024). These soils are mapped as Holocene-aged alluvium indicating high potential for encountering buried archaeological resources from 1 to 30 feet below modern ground surfaces. This is important because researchers have hypothesized that most of the archaeological evidence of early occupation [circa 4000–5000 Before Common Era (BCE)] of the San Joaquin Valley is likely buried under alluvium (Moratto 1984, p. 214).

Archaeological Context

Occupation of the project vicinity is generally divided into three broad time periods: the Paleoindian Period (ca. 11,550–8550 BCE), the Archaic Period (8550 BCE–Common Era (CE) 1100] and the Emergent Period (CE 1,000–European Contact). The Archaic Period

is further divided into the Lower (8550–5550 BCE), Middle (5550–550 BCE), and Upper (550 BCE–CE 1100). These chronologies are important for understanding how people changed over time in issues such as resource intensification, trade and exchange, social structure of groups, and economic organization (RCI 2023t, pp. 5.1-1 through 5.1-3). The San Joaquin Valley is less studied than other geomorphic regions of California, however available evidence indicates that occupation dwindled from circa 1000–1500 CE due to drying climate while populations increased after 1500 CE in the southern and western portions of the valley (Moratto 1984, p. 215).

Ethnographic Context

The project site is in the traditional territory of the Penutian-speaking Yokuts, who are further divided based upon linguistic distinctions into the Northern Valley Yokuts, Southern Valley Yokuts, and Foothill Yokuts. The project site is in the approximate ethnographic boundary of the Northern and Southern Valley Yokuts (specifically the Tachi Yokuts). The Yokuts established large permanent villages; however, most of the western San Joaquin Valley is regarded as being too arid to support permanent habitation. The project vicinity was likely used for hunting and travel. Notably, a major Native American trail, named El Camino Viejo by the Spanish, ran near the project site and early records document a campsite along Cantua Creek. Fresno Slough also served as travel corridor by tule raft. (RCI 2023t, pp. 5.1-3 and 5.1-4.)

Historic Period Context

Post-contact history of California is generally divided into three periods: Spanish Period (1769–1822), Mexican Period (1822–1848), and the American Period (1848–present). Early Spanish explorers recorded interactions with the Yokuts in 1772 near Tejon Pass. Permanent, non-Native settlement of the project vicinity did not occur until the American Period when agriculture and then oil drove the region’s economy. Construction of the California Aqueduct created a reliable source of water and increased agricultural production in the area from the 1970s to the present (RCI 2023t, pp. 5.1-5 through 5.1-9).

Much of the land in western San Joaquin Valley was used to cultivate cotton. One of the larger operations in the project site was Vista del Llano Farms which encompassed 54,000 acres. Vista del Llano provided worker housing for their seasonal laborers. Labor camps were not noted for their quality, but by the 1950s farm owners improved amenities to retain workers. There are two Quonset hut buildings in the project vicinity that served as worker housing in the 1950s and 1960s. These prefabricated, portable buildings were designed in 1941 for use during World War II. After the war, surplus Quonset huts found their way into civilian life for residential, commercial, and agricultural uses (RCI 2023t, pp. 5.1-7 through 5.1-10).

Regulatory

Federal

Section 106 of the National Historic Preservation Act. No federal permits are required, the project is not on federal lands, and the project will not receive federal funds therefore this law does not apply.

State

California Register of Historical Resources (Pub. Resources Code § 5024.1).

The California Register of Historical Resources (CRHR) establishes the following criteria for listing as a historical resource:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. is associated with the lives of persons important to our past.
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. has yielded, or may be likely to yield, information important in prehistory or history.

The CRHR also includes the following:

- properties determined eligible for or listed in the National Register of Historic Places.
- a resource included in a local register of historical resources or identified in a historical resources survey.
- any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant.
- Points of Historical Interest and State Historical Landmarks with a number greater than No 770.

California Environmental Quality Act (Pub. Resources Code, § 21084.1).

Requires that lead agencies determine if a project could have a significant impact on historical or unique archaeological resources. The California Environmental Quality Act (CEQA) establishes that an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (Cal. Code Regs., tit. 14, § 15064.5 (b)(1)). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that

convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (Cal. Code Regs., tit. 14, § 15064.5(b)(2)(A)).

In 2014, CEQA was expanded to include the category tribal cultural resource. A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code, § 21084.2). It further states the CEQA lead agency shall, when feasible, avoid damaging effects to any tribal cultural resource (Pub. Resources Code, § 21084.3).

Unique Archaeological Resources (Pub. Resources Code, § 21083.2). If an archaeological resource does not qualify as a historical resource, it may meet the definition of a “unique archaeological resource.” The Public Resources Code, section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. is directly associated with a scientifically recognized important prehistoric or historic event or person.

Health and Safety Code, § 7050.5. In the event of the discovery of human remains outside of the context of a formal cemetery, the California Health and Safety Code, section 7050.5 requires that construction be halted and that the coroner be notified. Requires the coroner to notify the Native American Heritage Commission (NAHC) if remains are determined to be Native American in origin.

Public Resources Code, § 5097.98. In the event human remains are discovered, the Public Resources Code, section 5097.98 authorizes the NAHC to assign a Most Likely Descendant (MLD). Requires that the landowner ensure the discovery is not further damaged and the MLD then may, with the landowner’s permission, inspect the find and make recommendations for the culturally appropriate treatment or disposition of the human remains and any associated grave goods. The landowner shall confer with the MLD all reasonable options regarding the MLD’s preferences for treatment. Where the parties are unable to agree on the appropriate treatment measures, the Native American human remains and associated items shall be reinterred on the property with appropriate dignity.

Assembly Bill 205 of 2022: Opt-In Regulations. Assembly Bill (AB) 205 (Chapter 61, 2022) authorized the California Energy Commission (CEC) to establish a new Opt-In program for eligible non-fossil-fueled power plants and related facilities. 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. As per Appendix B (g) (2) of Title 20, this assessment must include specific information regarding Cultural Resources. Because that information is clearly defined in state law and included in the Opt-In application, it is not repeated herein.

Local

Fresno County General Plan. The Fresno County General Plan was updated in February 2024 (Fresno 2024). The Plan contains policies that “seek to preserve historical, archaeological, paleontological, geological, and cultural resources of the county through development review, acquisition, encouragement of easements, coordination with other agencies and groups, and other methods” (Fresno 2024, pp. 2-139 to 2-140).

Open Space and Conservation Element. Goal OS-J in the Open Space and Conservation Element is to identify, protect, and enhance Fresno County’s important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County’s historically significant resources to promote historical awareness, community identity, and to recognize the county’s valued assets that have contributed to past county events, trends, styles of architecture, and economy.

The following policies under Goal OS-J are applicable to the project:

- OS-J.1 Preservation of Historic Resources. The County shall encourage preservation of any sites and/or buildings identified as having historical significance pursuant to the list maintained by the Fresno County Historic Landmarks and Records Advisory Commission. [Regulatory and Development Review (RDR)]
- OS-J.2 Historic Resources Consideration. The County shall consider historic resources during preparation or evaluation of plans and discretionary development projects that may impact buildings or structures. For a project projected on a property that includes buildings, structures, objects, sites, landscapes, or other features that are 45 years of age or older at the time of permit application, the project applicants shall be responsible for preparing and implementation of the recommendations of a historical resources evaluation completed by qualified cultural resources practitioners. (RDR)
- OS-J.3 Minimize Impacts. Whenever a historical resource is known to exist on a proposed project site, the County (i.e., Fresno County Historic Landmarks and Records Advisory Commission) shall evaluate and make recommendations to minimize potential impacts to said resource. (RDR)
- OS-J.4 Cultural Resources Protection and Mitigation. The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may

be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers. (RDR)

- OS-J.5 Archaeological Sites Confidentiality. The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts. [County Services and Operations (SO)]
- OS-J.6 Native American Consultation. The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance. (RDR) [Inter-governmental Coordination (IGC)]

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on cultural and tribal cultural resources to be potentially significant. The cumulative project setting for cultural and tribal cultural resources includes all projects in **Appendix A, Table A-1** and **Figure A-1**.

Cumulative impacts to cultural resources and tribal cultural resources fall within two areas: destruction of a substantial body of the archaeological, built environment, or tribal cultural resource record in Fresno County such that it is no longer possible to understand, or learn more about, the cultural history of the area; and alteration of a sufficient number of historical resources such that the precontact and historic periods of Fresno County's history can no longer be appreciated, valued, or interpreted.

5.4.2 Environmental Impacts

CULTURAL AND TRIBAL CULTURAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Code, section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Public Resources Code, section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CULTURAL AND TRIBAL CULTURAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code, section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code, section 5020.1(k), or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code, section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, cultural resources and tribal cultural resources.

5.4.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Literature Review Methods

The literature review for this analysis consisted of a series of records searches at the San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS) and archival map research. The SSJVIC is the State of California's official repository of cultural resource records, previous cultural resources studies, and historical information concerning cultural resources for five counties, including Fresno. Additionally, staff reviewed the project proponent's application and

supporting documentation, and examination of pertinent literature concerning cultural resources in western Fresno County.

The applicant's qualified consultants conducted a series of records searches at the SSJVIC in 2022 and 2023 (Ogaz et al. 2024, pp. 37–38; RCI 2023t, pp. 5.1.10 through 5.1-14). The first search (SSJVIC File No. 22-298) was conducted on August 1, 2022, and encompassed the original footprint and a 0.5-mile search buffer. A second search was conducted on September 19, 2022, due to changes in the project footprint (SSJVIC File No. 22-350). Subsequent searches were conducted on August 2, 2023 (SSJVIC File No. 23-300) and August 23, 2023 (SSJVIC File No. 23-351) of the entire project site and 1-mile radius in compliance with CEC guidelines. A supplemental records search was conducted in July 2024 (SSJVIC File No. 24-312) for the PG&E Downstream Network Upgrades and a 1-mile radius (Campbell-King and Duran 2024, p. 9).

Review of historic maps indicate a road alignment along the present-day course of West Cerini Avenue as early as 1891. Aerial images from 1933 to 1955 depict the project site is largely undeveloped with minimal farms. Vista del Llano Farms is first depicted on the 1956 topographic map as within and adjacent to the western boundary of the project site (RCI 2023t, pp. 5.1-14 through 5.1-16).

Tribal Outreach Methods

The applicant's consultant contacted the Native American Heritage Commission (NAHC) on July 25, 2022, to request a search of the Sacred Lands File (SLF), as well as to receive a contact list of Native Americans culturally affiliated with the project site. An additional request was submitted to the NAHC on August 4, 2023. The NAHC replied on August 29 and 30, 2023, that the SLF search was negative and provided a list of 17 contacts representing three federally recognized tribes and eight non-recognized tribes. The applicant's consultant sent outreach letters inquiring about information regarding cultural resources within or near the project site to these individuals in August 2023 and followed up with phone calls and emails to ensure receipt of the letter (RCI 2023t, p. 5.1-28). As of August 2023, the applicant's consultant received three responses. The Traditional Choinumni Tribe and Xolon-Salinan Tribe both responded that the project was outside their traditional area while the Tule River Tribe responded that they would defer to the Table Mountain Rancheria. The consultant's outreach efforts are in Appendix 1-2 to the confidential cultural resources inventory report supporting this application (Ogaz et al. 2024). On July 23, 2024, a second request was made to the NAHC specifically for the PG&E Downstream Network Upgrades portions of the project. The NAHC responded on July 26, 2024, that the SLF search was positive. On August 15, 2024, the consultant sent outreach letters to the 11 contacts the NAHC provided. The consultant's supplemental outreach efforts are in Appendix C to the confidential cultural resources inventory report supporting this application (Campbell-King and Duran 2024).

CEC Tribal Outreach and Consultation

The CEC, pursuant to their responsibilities under CEQA, contacted the NAHC to obtain an updated contact list and the NAHC responded on November 30, 2023 (NAHC file

PROJ-2023-005793). The CEC staff emailed project notifications and request for comments on December 21, 2023 (TN 253712) and April 26, 2024 (TN 259320) to the following:

- North Valley Yokuts Tribe
 - Tribal Secretary
 - Tribal Administrator
 - Tribal Compliance Officer
 - Tribal Historian
- Santa Rosa Rancheria Tachi Yokut Tribe
 - Tribal Historic Preservation Officer
 - Cultural Specialist I
 - Cultural Specialist II
- Table Mountain Rancheria
 - Chairperson
 - Cultural Resource Director
- Tule River Indian Tribe
 - Chairperson
 - Tribal Archaeologist
 - Environmental Department
- Wuksachi Indian Tribe/Eshom Valley Band
 - Chairperson

On December 11, 2024, Tachi Yokut Tribe Cultural Specialist, Samantha McCarty, telephoned CEC staff Assistant Tribal Liaison, Gabriel Roark. Samantha McCarty informed CEC staff that the applicant's consultant, Rincon Consultants (Rincon), had been coordinating with the Tachi Yokut Tribe and that the communication had been positive. Samantha McCarty disclosed that Rincon had not provided the Tachi Yokut Tribe with records search results, cultural resource records, locations of isolated artifacts, or their full survey reports, deferring this to the CEC staff. Without this information, the Tachi Yokut Tribe cannot provide all its comments on the project application or supporting studies.

The CEC staff provided electronic versions of the requested documents to the Tachi Yokut Tribe by secure file transfer on December 11, 2024. The Tachi Yokut Tribe downloaded the documents the same day.

Consultation with the Tachi Yokut Tribe is ongoing and the CEC staff will provide updates in the Updated Staff Assessment/final environmental impact report.

Historical Society Outreach

The applicant's consultant contacted the Fresno Historical Society on August 10, 2023, to request information regarding cultural resources that may exist within or near the project site, and followed up with a phone call on August 18, 2023, as well as an additional email on August 22, 2023. No reply had been received as of September 1, 2023 (RCI 2023t, p. 5.1-28). A copy of the letter request to the Fresno Historical Society can be found in Appendix I-1 Volume 2 of the confidential cultural resources inventory report supporting this application (Ogaz et al. 2024).

Field Investigation Methods

The applicant's consultant conducted a cultural resources pedestrian survey of the solar facility project site between September 12, 2022, and October 24, 2022, and the gentie line corridor between March 27, 2023, and April 6, 2023. The archaeological pedestrian survey was completed using 15-meter transects. Surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were also visually inspected. Areas with no ground visibility and dense vegetation (i.e., active agricultural land) were not surveyed. Areas outside of Westlands Water District property were not surveyed due to a lack of permission to access (Ogaz et al. 2024, pp. 38–39; RCI 2023t, pp. 5.1-16 and 5.1-25). No archaeological or geoarchaeological subsurface investigations were conducted.

CEC guidelines call for a pedestrian archaeological survey of a 200-foot buffer around the project footprint. The applicant's consultant was unable to meet this requirement due to lack of permission to enter private property. They further explained that, since there were no previously recorded archaeological sites in the 200-foot buffer and no newly recorded resources near the boundaries they determined it was not necessary to survey those areas. CEC agrees with this rationale; no additional surveys are required.

The applicant's consultant conducted a built environment survey on August 7 and 8, 2023, in areas within 0.5-mile of the project site that had not been covered during previous cultural resources survey efforts. Pursuant to CEC Guidelines, properties over 45 years of age within the project site and within 0.5-mile of the project were evaluated for inclusion in the National Register of Historic Places (NRHP) and CRHR and recorded on California Department of Parks (DPR) 523 Forms. In areas where permission to access had not been granted, surveyors conducted windshield survey from the public right-of-way (Ogaz et al. 2024, p. 39; RCI 2023t, p. 5.1-26).

Results of Investigation

Collectively, the CHRIS records searches of the Darden Clean Energy Project, including the PG&E Downstream Network Upgrades project areas, identified 73 studies within 1

mile of the project site (Campbell-King and Duran 2024; Ogaz et al. 2024). The SSJVIC has record of 19 cultural resources studies within 1 mile of the solar facility, Gen-tie, and PG&E Utility Substation project components. Of these studies, seven include a portion of the project site indicating that approximately 30 percent of the solar facility site and Gen-tie alignment had been studied and surveyed within the last 23 years. The SSJVIC has record of 54 studies within 1-mile of the PG&E Downstream Network Upgrades portion of the project, 21 of which cover portions of the PG&E Downstream Network Upgrades project locations.

The SSJVIC has record of 11 cultural resources within a 1-mile radius of the solar facility, Gen-tie, and PG&E Utility Substation project locations, four of which were recorded crossing the Gen-tie alignment (the California Aqueduct, Interstate 5, and two electrical transmission lines). No previously recorded resources are documented within the solar facility or the utility switchyard. The supplemental records search for the PG&E Downstream Network Upgrades identified eight resources within the PG&E project area and four within 0.5-miles of the PG&E project area.

A pedestrian archaeological survey of the solar facility, Gen-tie, and PG&E Utility Substation project locations (Ogaz et al. 2024) identified 13 archaeological resources consisting of four historic-period resources and nine isolated, precontact artifacts (chert or obsidian flaked stone artifacts and one portable mortar). The four historic-period archaeological resources all consist of concrete foundation remains and scattered artifacts, one with a capped oil well and one with a capped water well (**Table 5.4-1**). There are no recorded archaeological resources within the PG&E Downstream Network Upgrades project components.

TABLE 5.4-1 ARCHAEOLOGICAL RESOURCES IN THE PROJECT AREA

Field Identification	Description	Eligibility Recommendation
Darden-S-HT-162	Unpaved segmented driveway, two concrete foundations, and one historic-era cylindrical weathered colorless glass jar with an Owen's Illinois makers mark	Not eligible
Darden-S-CJ-46	Poured concrete foundation with two distinct foundation levels, a drain and basin, and a concrete entrance path that extends off the lower northern portion of the foundation	Not eligible
Darden-S-CJ-120	Capped oil well surrounded by a concrete foundation, concrete rubble, and historic-period refuse, including bottles and miscellaneous glass fragments, ceramics, metal and glass slag, brick, and miscellaneous ferrous and non-ferrous metal fragments	Not eligible
Darden-S-AB-03	Two poured concrete foundations, one with a metal plate-capped water well and the other foundation likely used to support a well pump, and four poured concrete supports	Not eligible
Darden-ISO-MS-01	Brown-grey chert biface, broken at base	Not eligible
Darden-ISO-HT-10	Sandstone mortar	Not eligible
Darden-ISO-CJ-68	Obsidian flaked tool, possible lunate crescent	Not eligible

TABLE 5.4-1 ARCHAEOLOGICAL RESOURCES IN THE PROJECT AREA

Field Identification	Description	Eligibility Recommendation
Darden-ISO-CJ-71	Obsidian modified flake and obsidian debitage	Not eligible
Darden-ISO-MML-74	Chert flake	Not eligible
Darden-ISO-MRL-75	Chert flake	Not eligible
Darden-ISO-CJ-103	Chert flake	Not eligible
Darden-ISO-HT-107	Obsidian biface, broken on distal end	Not eligible
Darden-ISO-KB-121	Chert flake	Not eligible

A built environment survey of the project site and 0.5-mile buffer identified 48 resources consisting of 23 irrigation ditches, a canal and reservoir, six electrical transmission lines and four PG&E Substations, Cantua Creek Bridge, a segment of Coalinga Canal, a segment of Interstate 5, a segment of the Southern Pacific Railroad, Westlands Water District Reservoirs 1 and 2, eight residences or agricultural properties including Vista del Llano Farms agricultural property with buildings and residences, and a segment of the San Luis Canal Division of the California Aqueduct (**Table 5.4-2**).

TABLE 5.4-2 BUILT ENVIRONMENT RESOURCES IN THE PROJECT AREA AND BUFFER

Name or Identification	Proximity to Project Site	Description	Eligibility Recommendation
Darden-BE-216	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-AB-152	Within Solar Facility and 0.5-mi buffer	Irrigation ditch	Not eligible
Darden-BE-AB-155	Within Solar Facility and 0.5-mi buffer	Irrigation ditch	Not eligible
Darden-BE-AB-159	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-AR-102	Within Solar Facility and 0.5-mi buffer	Irrigation ditch	Not eligible
Darden-BE-AR-103	In 0.5-mi buffer of Solar Facility	Irrigation ditch	Not eligible
Darden-BE-AR-104	In 0.5-mi buffer of Solar Facility	Irrigation ditch	Not eligible
Darden-BE-AR-106	In 0.5-mi buffer of Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-101	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-115	Within Solar Facility	Reservoir and canal	Not eligible
Darden-BE-CJ-117	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-119	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-127	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-139	Within Solar Facility	Irrigation ditch and basin	Not eligible
Darden-BE-CJ-149	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-150	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-166	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-206	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-CJ-211	Within Solar Facility	Irrigation ditch	Not eligible

TABLE 5.4-2 BUILT ENVIRONMENT RESOURCES IN THE PROJECT AREA AND BUFFER

Name or Identification	Proximity to Project Site	Description	Eligibility Recommendation
Darden-BE-JCB-13	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-LN-89	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-LM-90	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-LM-92	Within Solar Facility	Irrigation ditch	Not eligible
Darden-BE-MR-172	Within Gen-tie line and PG&E Network Upgrades and buffer of Utility Switchyard	Los Banos Midway 500kV and Los Banos-Gates 500kV Powerlines	Not eligible
P-10-0003930/ CA-FRE-3109H	In 0.5-mile buffer of PG&E Network Upgrades	Southern Pacific Railroad segment	Not eligible
P-10-006207/ CA-FRE-003645H	Within Gen-tie line and buffer of PG&E Network Upgrades	California Aqueduct/San Luis Canal Division of the California Aqueduct	Eligible for NRHP and CRHR (Criterion A/1)
P-10-006610/ CA-FRE-003769H	Within Gen-tie line and PG&E Network Upgrades and in buffer of Utility Switchyard	Gates-Panoche 230 kV No. 1&2 (AE-3043-BE-002)	Not eligible
P-10-006612/ CA-FRE-003770H	Within Gen-tie line and PG&E Network Upgrades and buffer of Utility Switchyard	Schindler-Panoche 115 kV Power Line (AE-3043-BE-004)	Not eligible
P-10-006614/ CA-FRE-3772H	Within PG&E Network Upgrades	Panoche-Kearney 230kV line	Not eligible
P-10-006640/ CA-FRE-3776H	Within PG&E Network Upgrades	Gates Gregg 230 kV Line	Not eligible
P-10-007185/ CA-FRE-3897H	Within PG&E Network Upgrades	Henrietta/Huron/Gates line	Not eligible
P-10-007205	Within Gen-tie line and in buffer of Utility Switchyard and PG&E Network Upgrades	Interstate 5	Not eligible
P-10-007351/ CA-FRE-3955H	In 0.5-mile buffer of PG&E Network Upgrades	Coalinga Canal segment	Not eligible
Vista del Llano Farms	Within Solar Facility site and buffer	Agricultural property with ancillary farming buildings, workers' housing, and single-family homes	Not eligible
17830 and 17880 South Sonoma Ave	In 0.5-mi buffer of Solar Facility	Three single-family dwellings and two ancillary buildings	Not eligible
24927 W Mount Whitney Ave	In 0.5-mi buffer of Solar Facility	Single-family residence with an ancillary building	Not eligible
Darden-BE-AR-100	In 0.5-mi buffer of Solar Facility	Irrigation ditch	Not eligible
24464 W Cerini Ave	In 0.5-mi buffer of Solar Facility	Single-family residence with two ancillary buildings	Not eligible
18117 S Sonoma Ave	In 0.5-mi buffer of Solar Facility	Six farming buildings and an irrigation ditch	Eligible, Criterion 3 (four buildings in Southern Perimeter Area)

TABLE 5.4-2 BUILT ENVIRONMENT RESOURCES IN THE PROJECT AREA AND BUFFER

Name or Identification	Proximity to Project Site	Description	Eligibility Recommendation
17631 S Sonoma Ave	In 0.5-mi buffer of Solar Facility	Quonset hut, one commercial building, four single-family residences, and an irrigation ditch	Eligible, Criterion 3 (small Quonset hut cabin is eligible)
Westlands Water District Reservoirs 1 and 2	In 0.5-mi buffer of Gen-tie line and Utility Switchyard	Two circular reservoirs on separate parcels	Not eligible
PGE Cantua Substation	Within PG&E Downstream Network Upgrades and in 0.5-mi buffer of Gen-tie line	Cantua Substation	Not eligible
Gates Substation	Within PG&E Downstream Network Upgrades	Gates Substation	Not eligible
Los Banos Substation	Within PG&E Downstream Network Upgrades	Los Banos Substation	Not eligible
Midway Substation	Within PG&E Downstream Network Upgrades	Midway Substation	Not eligible
17056 S Sonoma Ave	In 0.5-mi buffer of Solar Facility	Agricultural property with three buildings and two manufactured buildings	Not eligible
19056 South Napa Avenue	Within Solar Facility	Two single-family dwellings and two ancillary buildings	Not eligible
Cantua Creek Bridge	In 0.5-mi buffer of Utility Substation	Concrete bridge spanning Cantua Creek at South Derrick Avenue	Not eligible

Notes: CRHR = California Register of Historical Resources; I-5 = Interstate 5; kV = kilovolt; mi = mile(s); NRHP = National Register of Historic Places

Buried Archaeological Site Sensitivity

The project site is underlain by Quaternary basin deposits and Quaternary fan deposits that have moderate to high archaeological sensitivity for buried archaeological resources. In addition, the areas within 6.2 miles of the Fresno Slough, 0.3 mile of intermittent drainages such as Cantua Creek, and 328 feet of historic-era roads and trails present an elevated sensitivity for archaeological resources. The presence of Holocene-aged alluvium throughout the project site, proximity to seasonal drainages and wetlands, similar geomorphological context to other previously recorded resources, and potential proximity to precontact trails indicates a moderate to high sensitivity for buried archaeological resources. (RCI 2023t, p. 5.1-33.)

Tribal Cultural Resources

Consultation with the Tachi Yokut Tribe is ongoing and the CEC staff will provide updates in the final staff assessment/final environmental impact report. To date, no tribal cultural resources have been identified within the Project site.

Thresholds of Significance for Historical Resources

For a cultural resource to be a historical resource and thus subject to the requirements of CEQA, it must meet one of the four criteria for listing in the CRHR (outlined above

under LORS). The applicant's consultant recommended that four resources meet the CRHR criteria and 49 do not (**Tables 5.4-1** and **5.4-2**). The consultant's recommendations regarding the four recommended eligible properties are as follows.

- San Luis Canal Division of the California Aqueduct (P-10-006207/CA-FRE-003645H): determined eligible for the NRHP and CRHR by consensus with the State Historic Preservation Officer (SHPO) in 2015 (Office of Historic Preservation [OHP] File No. BUR-2014_1217_001) under Criteria A/1 as the largest and most significant of the water conveyance systems and C/3 for its complex design necessary to redistribute water throughout the state of California. Built between 1962 and 1967, the 102.5-mile division runs southeast from the O'Neill Forebay near Los Banos towards Kettleman City. The concrete-lined, trapezoidal canal measures 50–110 feet in base width and 25.1–36.8 feet in depth. The San Luis Canal division of the California Aqueduct runs through the gen-tie line corridor. (Ogaz et al. 2024, p. 46; RCI 2023t, p. 5.1-27.)
- Quonset hut cabin at 17631 South Sonoma Avenue (Assessor's Parcel Number [APN] 050-020-25): includes a large Quonset hut, two ancillary agricultural buildings, a grouping of 26 metal tanks, and four residences with ancillary buildings along South Sonoma Avenue. Historically the property was part of the Vista del Llano Farms which has been subdivided over the years. The parcel includes a smaller wood-frame Quonset hut cabin, built in 1946 to house agricultural laborers. The smaller Quonset hut was recommended eligible under Criterion C/3 due to being a rare surviving example of agricultural laborer housing in Fresno County. During immediate post-World War II years in California, the military-originated Quonset building type was adapted to many uses throughout the nation. Research indicates that few examples that were adapted to agricultural housing appear to remain in the region (Ogaz et al. 2024, p. 35). The building appears to retain its original characteristic form with a one-story height, wood walls, and arched roof covered with corrugated metal, while door and window openings are infilled with wood siding but remain discernable. Research indicates that labor camps were common in this area of Fresno County after World War II, including a large camp of approximately 134 Quonsets at Vista del Llano Farms, but surviving laborer housing buildings dating to that period are extremely rare, with the subject example appearing to be the only extant building of its type in the region. Therefore, the surviving laborers' housing Quonset hut within the subject property is recommended individually eligible for listing in the NRHP and CRHR under Criterion C/3, with a period of significance of 1946, corresponding to the building's year of construction (Ogaz et al. 2024, pp. 72–76; RCI 2023t, p. 5.1-28).
- Four dormitory residences at 18117 South Sonoma Avenue (APN 050-020-37): consisting of two groupings of farming buildings and an irrigation ditch. The Southern Perimeter Group consists of four one-story, residential buildings constructed of concrete block walls. The dormitories were built in 1956 to house agricultural workers on the Vista del Llano Farms cotton farm. The Northern Perimeter Group includes three one-story residential buildings and four ancillary storage buildings. The residential buildings appear to be modular manufactured

homes dating to 1971 or later. The four residential buildings in the Southern Perimeter Group are recommended eligible under Criterion C/3 due to being an intact and rare example of laborer housing in Fresno County or more broadly California that is also representative of a period when improvements to worker housing conditions were coming into focus. Therefore, this four-building group within the subject property is recommended individually eligible for listing in the NRHP and CRHR under Criterion C/3. The period of significance for the buildings is 1957 when they were constructed (Ogaz et al. 2024, pp. 67–71). The buildings in the North Perimeter Group and the irrigation canal are recommended as not eligible under any criteria.

- Isolated obsidian biface (Darden-ISO-CJ-68): potentially a lunate crescent or crescent preform was observed within an agricultural field on the project site. This classification is based on the tool's form, a biface with a slight crescentic shape. Crescents have been associated with wetland habitats and were potentially used in the hunting and processing of waterfowl. They are typically found within 1 kilometer (km) of marsh or lake habitats; Darden-ISO-CJ-68 was found approximately 5 km west of the historical western extend of the Fresno Slough which was once interconnected with the greater Tulare Lake wetlands. Crescent tools have been dated to the Paleoindian Period or Early Archaic (12,000–8000 BP). The Witt Site at the southern shore of Tulare Lake (CA-KIN-32) is the most significant San Joaquin Valley locality where crescents have been recorded, with approximately 1,500 artifacts of the type noted in its assemblage. Crescents recorded elsewhere in California are typically one per site. Darden-ISO-CJ-68 does not retain integrity of location, but as a unique artifact, it exhibits distinctive characteristics that may be significant to San Joaquin Valley archaeology and informative to our understanding of Paleoindian and Early Archaic populations. Classified as a crescent, the applicant's consultants decided Darden-ISO-CJ-68 is a unique archaeological artifact embodying distinctive characteristics and therefore recommended it as meeting Criterion C/3 (Ogaz et al. 2024, p. 77; RCI 2023t, p. 5.1-25).

The remaining 49 built environment and archaeological resources are recommended not eligible for the CRHR. The consultant's report does not clearly state whether any of the recorded archaeological resources meet the definition of *unique archaeological resource*.

After review, CEC staff have made the following conclusions:

- San Luis Canal Division of the California Aqueduct was determined eligible for the NRHP and CRHR by consensus in 2015 (OHP File No. BUR-2014_1217_001) under Criteria A/1 and C/3. Because the SHPO has concurred in this determination of eligibility, the San Luis Canal Division is automatically a historical resource for the purposes of CEQA (Pub. Resources Code, § 5024.1(d)(1)).
- A small Quonset hut at 17631 South Sonoma Avenue is recommended eligible under Criterion C/3 due to being a rare surviving example of agricultural laborer housing in

Fresno County (Pub. Resources Code, § 5024.1(c)(3)). The remaining buildings are not eligible.

- Four dormitory buildings at 18117 South Sonoma Avenue are recommended eligible under Criterion C/3 due to being rare surviving examples of agricultural laborer housing in Fresno County (Pub. Resources Code, § 5024.1(c)(3)). The remaining buildings and irrigation ditch are not eligible.
- Darden-IO-CJ-68 is an isolated obsidian flaked tool that the applicant's consultant contends is a "crescentic artifact" and because it is a unique artifact embodying distinctive characteristics it meets Criterion C/3. CEC has determined, however, that this obsidian biface does not meet any of the four criteria for listing in the CRHR. Further, it does not meet the criteria of "unique archaeological resource." To be unique, an object must be unusual, rare, or an exemplary item typifying a specific class. The applicant's consultant contends that this obsidian biface is a "crescentic artifact" and assign it to Paleoindian and Early Archaic populations, however review by a lithic analyst specialist indicates it is a broken stage 4 obsidian biface that likely was abandoned during manufacture or repair (Jackson, personal communication 2024). The transverse break at the distal end indicates a percussion blow from the lateral margin which detached the end of the biface. Such a blow was likely intended to thin the biface but instead failed and took off the end and a small portion of the opposing lateral margin (a type of *outré passé*). The artifact exhibits some well-controlled light percussion flaking that reached at or just passed the midline, but at about halfway along the margin there appears to be failure in the percussion flaking that removed and crushed an excessive amount of margin, giving the appearance of a concavity in the margin profile although likely unintentional. Both margins exhibit edge preparation but incomplete execution of thinning, resulting in an irregular, scalloped edge which gave the opposing edge a concave appearance. Pressure flaking that is common to create well-defined and symmetrical margins is absent. In short, the roughly crescentic outline of this obsidian biface is a coincidence of failures in percussion flaking and likely abandonment of the biface before achieving the desired form, whatever that desired form might have been. Assignment of the artifact to Paleoindian and Early Archaic populations begs greater evidence than just a rough outline form. Obsidian hydration analysis could provide additional evidence, although there might be objections to such destructive treatment. Given the location of this discovery in the San Joaquin Valley, it is likely that the obsidian derived from an eastern California source, either Truman Meadows or the Coso source. An artifact of Paleo or Early Archaic age from such sources would surely exhibit more patination and surface wear. In conclusion, the biface's slightly crescentic outline is an unintentional consequence of manufacturing failure rather than design. Therefore, the biface would not be unique, as discarded manufacturing failures are common in the archaeological record.

The CEC staff conclude that the remaining 49 built environment and archaeological resources do not meet any of the four criteria for listing in the CRHR and therefore need not be considered further (Cal. Code Regs., tit. 14, § 15064.5(c)(4)). The CEC

staff concludes that none of the remaining 12 recorded archaeological resources meets the definition of *unique archaeological resource*.

5.4.2.2 Direct and Indirect Impacts

Criteria for determining if a proposed project will have a significant impact on an identified historical resource is whether the project will alter the integrity of the Historical Resource in an adverse manner such that it would no longer be eligible to the NRHP, the CRHR, or any other local landmark programs. Under CEQA, the proposed project would cause a significant impact if it caused a substantial adverse change in the significance of a historical resource, an archeological resource, or a tribal cultural resource as defined at the California Code of Regulations, Title 14, Chapter 3, section 15064.5.

The proposed project would have a significant impact on cultural resources if it would:

- Physically alter, damage, or cause destruction of all or a part of a historical or archaeological resource.
- Demolish or materially alter in an adverse manner those physical characteristics of a Historical Resource that convey its significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources, inclusion in a local register of historical resources, or its determination to be a historical resource by a CEQA lead agency.
- Demolish or materially alter in an adverse manner those physical characteristics of an archaeological artifact, site, or object that enable it to meet the definition of a unique archaeological resource under CEQA.
- Disturb any human remains, including those interred outside of formal cemeteries.

Direct and indirect impacts to significant Historical Resources are considered herein as follows.

- Direct or primary impacts are caused by the project and occur at the same time and place (Cal. Code Regs., tit. 14, § 15358 (a)(1)).
- Indirect impacts, or secondary effects, are reasonably foreseeable and caused by a project but occur at a different time or place (Cal. Code Regs., tit. 14, § 15358 (a)(2)).

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Code, section 15064.5?

Construction– Less Than Significant with Mitigation Incorporated

Based on the analysis below, project construction would have a less than significant impact on historical resources with mitigation incorporated. While there are no historical resources in the project area, there is a possibility that undocumented historical

resources could be discovered during construction. Incorporation of Conditions of Certification (COCs) **CUL-1** through **CUL 6** would reduce any impacts to less than significant.

Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

No built environment historical resources are known to exist within the battery energy storage system (BESS) or step-up substation location. The proposed gen-tie corridor would cross over the San Luis Canal Division of the California Aqueduct (P-10-006207), a historical resource determined eligible for the NRHP and CRHR under Criterion A/1 and C/3. The project does not propose any direct, physical alterations to the aqueduct itself. All project work would be constructed adjacent to and above the boundaries of the resource. The gen-tie line would span the aqueduct and thus would introduce a new visual element to the setting; however, this would not impact the resource's ability to convey its historical significance as the largest water conveyance system developed as part of the State Water Project. The setting of the California Aqueduct throughout its length has historically included other infrastructure such as transmission lines and has been continuously altered with construction of new transmission lines, roads, and bridges since its construction. Approximately 3.2 miles south of the project site, the Schindler-Panoche 115-kilovolt Transmission Line runs east-west over the California Aqueduct; the transmission line pre-dates the aqueduct as it was constructed between 1937 and 1956 according to aerial imagery, while the California Aqueduct was not constructed in this area until 1962 to 1967. The proposed gen-tie line would be consistent with the historical and current setting of the resource and would not introduce a visual element that would diminish the California Aqueduct's ability to convey its historical significance.

No archaeological historical resources are known to exist within the BESS, step-up substation location, or the Gen-tie corridor. A pedestrian archaeological survey of the project site identified 13 archaeological resources, none of which meet the CRHR or NRHP criteria and thus are not historical resources requiring further management under CEQA. A geoarchaeological assessment of the project, however, concluded the BESS location exhibits high sensitivity for buried archaeological resources and therefore there is a moderate to high archaeological sensitivity for buried archaeological resources. The historic-era agricultural activities in the project area have disturbed roughly the first 18 inches below the current ground surface, but there is a potential for intact, information-bearing archaeological deposits below this depth.

If buried archaeological resources are damaged during construction, it would be considered a significant impact. The applicant's response to Data Request DR PD-10 indicates excavation would be up to 12 feet deep for the BESS foundation, up to 40 feet deep to install gen-tie utility pole foundations, and 10–22 feet for the step-up substation. The applicant's response to Data Request DR PD-12 indicates the gen-tie right-of-way would not be graded or cleared except for a 50-foot-by-50-foot area immediately surrounding the pole structures and an access corridor approximately 20

feet wide. (RCI 2024k, pp. 20 and 22.) Ground-disturbing activities within soils not previously disturbed could result in significant impacts to archaeological resources due to the depth of proposed ground-disturbing activities and location within moderate to high-sensitivity areas. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes cCOCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions.

Solar Facility

No built environment historical resources have been documented within the proposed solar facility. Two built environment historical resources (farmworker housing at 18117 South Sonoma Avenue and 17631 South Sonoma Avenue) have been identified within the search area required in CEC's guidelines for cultural resources inventories, but both are outside the of the project site and neither would be directly, physically altered by the project. Both resources were determined eligible for listing in the NRHP and CRHR under Criterion C/3 because each contains rare examples of farmworkers' housing stemming from their development and use as part of the former Vista del Llano Farms. The eligible, contributing elements of these two properties are limited to the single Quonset hut cabin at 17631 South Sonoma Avenue and a grouping of four workers' dormitories at 18177 South Sonoma Avenue. The project would result in a change in setting to both resources through potential visual impacts associated with the new solar facility; however, this would not impair the ability of either resource to convey its historical significance. The setting of both resources has continually changed over time, through the subdivision of the larger of Vista del Llano Farms and demolition of other workers' housing and facilities of the former cotton production operation. As such, setting is not a primary physical feature which conveys the historical significance of either resource. Further, the immediate setting of both resources would not be altered as part of the project. The eligible Quonset hut cabin at 17631 South Sonoma Avenue is approximately 300 feet from the project site and separated by South Sonoma Avenue. 18117 South Sonoma Avenue is located within the 0.5-mile buffer of the project site and separated by South Sonoma Avenue; however, the eligible elements of this resource, specifically the four dormitory buildings, are located 1.21 miles from the project site. While new solar panels would be introduced to the east of both resources, the areas to the north, west, and south of these resources would not be altered in any way and would remain agricultural in character.

No archaeological historical resources are known to exist within the proposed solar facility. A pedestrian archaeological survey of the project site identified 13

archaeological resources, none of which meet the CRHR or NRHP criteria and thus are not historical resources requiring further management under CEQA. A geoarchaeological assessment of the project site, however, concluded there is a moderate to high archaeological sensitivity for buried archaeological resources. The historic agricultural activities in the project area have disturbed roughly the first 18 inches below the current ground surface, but there is a potential for intact, information-bearing archaeological deposits below this depth.

If buried archaeological resources are damaged during construction, it would be considered a significant impact. The applicant's response to Data Request DR PD-10 indicates excavation for transformer pads would be up to 4 feet deep, inverter piles would be up to 12 feet deep, and the O&M buildings foundation would be up to 3 feet deep. The initial application indicated that ground disturbance required to build the project is anticipated to be up to 20 feet for structural foundations, trenching up to 6 feet deep for underground cables, and grading and compacting the entire ground surface up to 12 inches deep. (RCI 2024k, p. 20.) Ground-disturbing activities within soils not previously disturbed could result in significant impacts to archaeological resources due to the depth of proposed ground-disturbing activities and location within moderate to high-sensitivity areas. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions.

PG&E Utility Switchyard

No built environment historical resources were identified within the utility switchyard location. Therefore, no construction impacts to the built environment historical resources would occur as a result of this project component. The utility switchyard location exhibits moderate to high sensitivity for buried archaeological resources. Historical agricultural activities in the project area have disturbed roughly the first 18 inches below the current ground surface. The applicant's response to Data Request DR PD-10 indicates excavation at the proposed utility switchyard will be 10–22 feet deep. (RCI 2024k, p. 20.) Ground-disturbing activities for the utility switchyard location project component within soils not previously disturbed could result in significant impacts to archaeological resources due to the depth of proposed ground-disturbing activities and location within moderate to high-sensitivity areas.

The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project

implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the California Public Utilities Commission (CPUC) on all activities. These measures would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce. Staff recommends Mitigation Measures (**MMs**) **CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

PG&E Downstream Network Upgrades

No built environment historical resources have been identified within PG&E's existing utility switchyards or on the transmission lines proposed for upgrades. Therefore, no construction impacts to built environment historical resources would occur as a result of this project component. The PG&E downstream network upgrade locations exhibit moderate sensitivity for buried archaeological resources. Ground-disturbing activities for the PG&E downstream network upgrade project components within soils not previously disturbed could result in significant impacts to previously unidentified archaeological resources due to the depth of proposed ground-disturbing activities and location within moderate sensitivity areas. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. measure would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce impacts. Staff recommends **MMs** **CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

Operation— No Impact

Based on the analysis below, project operation would not involve activities that would cause a substantial adverse change to historical resources.

Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operations and maintenance (O&M) activities associated with the BESS, step-up substation, and gen-tie line components would not involve activities that would have the potential to alter a built environment historical resource or to unearth archaeological resources. Therefore, no operational impacts to historical resources would occur as a result of these project components.

Solar Facility

O&M activities associated with the solar facility would not involve activities that would have the potential to alter a built environment historical resource or to unearth archaeological resources. Therefore, no operational impacts to historical resources would occur as a result of the project.

PG&E Utility Switchyard and Downstream Network Upgrades

O&M activities associated with the utility switchyard and downstream network upgrades would not involve activities that would have the potential to alter a built environment historical resource or to unearth archaeological resources. Therefore, no operational impacts to historical resources would occur as a result of the project.

b. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Public Resources Code, section 15064.5?

Construction– Less Than Significant with Mitigation Incorporated

Based on the analysis below, project construction would have a less than significant impact on unique archaeological resources with mitigation incorporated. While there are no unique archaeological resources in the project area, there is a possibility that undocumented unique archaeological resources could be discovered during construction. Incorporation of COCs **CUL-1** through **CUL 6** would reduce any impacts to less than significant.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

No unique archaeological resources are known to exist within the BESS, step-up substation, or gen-tie component locations. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified unique archaeological resource might be unearthed during construction. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions.

Solar Facility

See the response to CEQA checklist criterion “a” above, which includes a discussion of historic, archaeological, and ethnographic resources. The applicant’s consultant identified one possible “crescentic” artifact, however CEC has determined that characterization is incorrect and the isolated obsidian biface is not a unique archaeological resource. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified unique archaeological resource might be unearthed during construction. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant’s measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions.

PG&E Utility Switchyard

No unique archaeological resources are known to exist within the PG&E utility switchyard component location. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified unique archaeological resource might be unearthed during construction. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. measure would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce impacts. Staff recommends **MMs CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

PG&E Downstream Network Upgrades

No unique archaeological resources are known to exist within the PG&E downstream network upgrade project component locations. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified unique archaeological resource might be unearthed during construction. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical

resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. These measures would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce. Staff recommends **MMs CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

Operation— *No Impact*

Based on the analysis below, project operation would not involve activities that would cause a substantial adverse change to unique archaeological resources.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

O&M activities for the BESS, step-up substation, and gen-tie line components would not involve ground-disturbing activities and therefore no operational impacts to unique archaeological resources would occur as a result of the project.

Solar Facility

O&M activities for the proposed solar facility would not involve ground-disturbing activities and therefore no operational impacts to unique archaeological resources would occur as a result of the project.

PG&E Utility Switchyard and Downstream Network Upgrades

O&M activities for the PG&E utility switchyard and downstream network upgrades would not involve ground-disturbing activities and therefore no operational impacts to unique archaeological resources would occur as a result of the project.

c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, project construction would have a less than significant impact on human remains with mitigation incorporated. While there are no known human remains in the project area, there is a possibility that undocumented human remains could be discovered during construction. Incorporation of COCs and MMs would reduce any impacts to less than significant.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

No formal cemeteries or human remains interred outside of formal cemeteries are known to exist within the BESS, step-up substation, or the gen-tie line component locations. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified human remains might be

unearthed during construction. The applicant proposes a measure that would require that construction be halted in the vicinity of discovery of human remains and work remain halted until avoidance or treatment of the human remains has been carried out with reporting to CEC. Staff has concluded that this measure is sufficient to reduce impacts. Staff proposes COC **CUL-3**. This measure would prevent or reduce impacts on inadvertently found human remains through early discovery, documentation, and other mitigative actions.

Solar Facility

No formal cemeteries or human remains interred outside of formal cemeteries are known to exist within the proposed solar facility. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified human remains might be unearthed during construction. The applicant proposes a measure that would require that construction be halted in the vicinity of discovery of human remains and work remain halted until avoidance or treatment of the human remains has been carried out with reporting to CEC. Staff has concluded that this measure is sufficient to reduce impacts. Staff proposes COC **CUL-3**. This measure would prevent or reduce impacts on inadvertently found human remains through early discovery, documentation, and other mitigative actions.

PG&E Utility Switchyard

No formal cemeteries or human remains interred outside of formal cemeteries are known to exist within the utility switchyard component location. Given the high to moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified human remains might be unearthed during construction. The PG&E Construction Measure **MM CUL-3** identifies stop-work procedures and reporting requirements to the CPUC in the event human remains are discovered. Staff has concluded that this measure is sufficient to reduce impacts. Staff recommends **MM CUL-3**. This measure would prevent or reduce impacts on inadvertently found human remains through early discovery, documentation, and other mitigative actions.

PG&E Downstream Network Upgrades

No formal cemeteries or human remains interred outside of formal cemeteries are known to exist within the PG&E downstream network upgrade locations. Given the moderate sensitivity for buried archaeological resources, however, there is a potential that a previously unidentified human remains might be unearthed during construction. The PG&E Construction Measure **MM CUL-3** identifies stop-work procedures and reporting requirements to the CPUC in the event human remains are discovered. Staff has concluded that this measure is sufficient to reduce impacts. Staff recommends **MM CUL-3**. This measure would prevent or reduce impacts on inadvertently found human remains through early discovery, documentation, and other mitigative actions.

Operation— *No Impact*

Based on the analysis below, project operation would not involve activities that would have the potential to disturb human remains.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

O&M activities for the BESS, step-up substation, and the gen-tie line components would not involve ground-disturbing activities that would have the potential to disturb human remains. Therefore, no operational impacts to human remains would occur as a result of the project.

Solar Facility

O&M activities for the solar facility would not involve ground-disturbing activities that would have the potential to disturb human remains. Therefore, no operational impacts to human remains would occur as a result of the project.

PG&E Utility Switchyard and Downstream Network Upgrades

O&M activities for the utility switchyard and the PG&E downstream network upgrades would not involve ground-disturbing activities that would have the potential to disturb human remains. Therefore, no operational impacts to human remains would occur as a result of the project.

d. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code, section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of Historical Resources as defined in Public Resources Code, section 5020.1(k)

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, project construction would have a less than significant impact on tribal cultural resources listed or eligible for listing in the CRHR with mitigation incorporated. While there are no documented tribal cultural resources that qualify for listing in the CRHR in the project area, there is a possibility that undocumented tribal cultural resources could be discovered during construction. Incorporation of COCs and MMs would reduce any impacts to less than significant.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

To date no tribal cultural resources that are listed or are eligible for listing on the CRHR have been identified within the proposed *BESS, Step-up Substation, O&M Facility, or Gen-tie line*. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found tribal cultural resources through early discovery, documentation, and other mitigative actions.

Solar Facility

To date no tribal cultural resources that are listed or are eligible for listing on the CRHR have been identified within the proposed solar facility. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found tribal cultural resources through early discovery, documentation, and other mitigative actions.

PG&E Utility Switchyard

To date no tribal cultural resources that are listed or are eligible for listing on the CRHR have been identified within the PG&E utility switchyard. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be

a significant impact. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. measure would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce impacts. Staff recommends **MMs CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

PG&E Downstream Network Upgrades

To date no tribal cultural resources that are listed or are eligible for listing on the CRHR have been identified within the PG&E downstream network upgrade locations. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. measure would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce impacts. Staff recommends **MMs CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

Operation— No Impact

Based on the analysis below, project operation would not involve activities that would cause a substantial adverse change to tribal cultural resources that are historical resources.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

O&M activities for the BESS, step-up substation, and gen-tie line would not involve activities that would have the potential to disturb or alter tribal cultural resources.

Solar Facility

O&M activities for the solar facility would not involve activities that would have the potential to disturb or alter tribal cultural resources.

PG&E Utility Switchyard and Downstream Network Upgrades

O&M activities for the PG&E utility switchyard and downstream network upgrades would not involve activities that would have the potential to disturb or alter tribal cultural resources.

- ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code, section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Construction— Less Than Significant with Mitigation Incorporated

Based on the analysis below, project construction would have a less than significant impact on tribal cultural resources with mitigation incorporated. While there are no documented tribal cultural resources in the project area, there is a possibility that undocumented tribal cultural resources could be discovered during construction. Incorporation of COCs and MMs would reduce any impacts to less than significant.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

To date no tribal cultural resources have been identified within the proposed BESS, Step-up Substation, O&M Facility, or Gen-tie line. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found tribal cultural resources through early discovery, documentation, and other mitigative actions.

Solar Facility

To date no tribal cultural resources have been identified within the proposed solar facility. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact

archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The applicant proposes cultural and tribal cultural mitigation measures that form a monitoring program for inadvertent discoveries of historical resources during project implementation. The applicant's measures identify professional qualifications for specialists and monitors who would observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and report to the CEC on all activities. Staff has concluded that these measures are sufficient to reduce impacts. Staff proposes COCs **CUL-1** through **CUL-6**. The monitoring program contained is a comprehensive program that would prevent or reduce impacts on inadvertently found tribal cultural resources through early discovery, documentation, and other mitigative actions.

PG&E Utility Switchyard

To date no tribal cultural resources have been identified within the PG&E utility switchyard. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. measure would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures are sufficient to reduce impacts. Staff recommends **MMs CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

PG&E Downstream Network Upgrades

To date no tribal cultural resources have been identified within the PG&E downstream network upgrade locations. There is a possibility, however, that ground disturbance associated with the proposed project could result in the destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be destroyed, it would be a significant impact. The PG&E Construction Measures for cultural and tribal cultural resources identify professional qualifications for specialists and monitors who will observe project implementation, train the construction workforce in basic identification of historical resources, prepare and implement a monitoring plan, implement stop-work procedures (if required), and reporting to the CPUC on all activities. measure would prevent or reduce impacts on inadvertently found historical resources through early discovery, documentation, and other mitigative actions. Staff has concluded that these measures

are sufficient to reduce impacts. Staff recommends **MMs CUL-1** through **CUL-3**. These measures would form a comprehensive monitoring program for inadvertent discoveries of historical resources during project implementation.

Operation— *No Impact*

Based on the analysis below, project operation would not involve activities that would cause a substantial adverse change to tribal cultural resources.

Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

O&M activities for the BESS, step-up substation, and gen-tie line would not involve activities that would have the potential to disturb or alter tribal cultural resources.

Solar Facility

O&M activities for the solar facility would not involve activities that would have the potential to disturb or alter tribal cultural resources.

PG&E Utility Switchyard and Downstream Network Upgrades

O&M activities for the PG&E utility switchyard and downstream network upgrades would not involve activities that would have the potential to disturb or alter tribal cultural resources.

5.4.2.3 Cumulative Impacts

Construction and Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, construction and operation would have a less than significant impact on historical resources or tribal cultural resources with mitigation incorporated. While there are no documented historical resources or tribal cultural resources in the project area, there is a possibility that undocumented historical resources or tribal cultural resources could be discovered during construction. Incorporation of COCs and MMs would reduce any impacts to less than significant. Operation would not involve activities that would have the potential to cause a substantial adverse change to historical resources or tribal cultural resources.

Solar Facility, Battery Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Of all the 28 projects identified in **Appendix A, Table A-1**, none have identified significant impacts to cultural or tribal cultural resources. Despite this, there is always a possibility that there might be impacts to an unknown resource or unanticipated impacts to a known resource. As discussed under applicable LORS, Fresno County requires notification of archaeological discoveries for any permitted project. State law requires specific steps to happen in the case of identification of human remains. As explained earlier in this document, implementation of COCs **CUL-1** through **CUL-6**

would reduce any project-specific impacts. Furthermore, the 28 projects identified for Cumulative Impact analysis possess similar mitigation measures that would reduce their contribution to cumulative impacts. CEC has concluded that these COCs are sufficient to reduce impacts.

PG&E Utility Switchyard and Downstream Network Upgrades

Of all the 28 projects identified in **Appendix A, Table A-1**, none have identified significant impacts to cultural or tribal cultural resources. Despite this, there is always a possibility that there might be impacts to an unknown resource or unanticipated impacts to a known resource. PG&E standard MMs require notification of archaeological discoveries for any project. State law requires specific steps to happen in the case of identification of human remains. As explained earlier in this document, implementation of **MM CUL-1** through **CUL-3** would reduce any project-specific impacts. Furthermore, the 28 projects identified for Cumulative Impact analysis possess similar mitigation measures that would reduce their contribution to cumulative impacts. CEC has concluded that these MMs are sufficient to reduce impacts.

5.4.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.4-3 below details staff's determination of conformance with applicable state and local LORS, including any proposed COCs, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.4-3 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis For Determination
State	
California Register of Historical Resources (Pub. Resources Code, § 5024.1)	
Establishes criteria for listing a cultural resource as a historical resource.	Yes. No known historical resources are anticipated to be impacted by the project. Despite that, there is a possibility undocumented cultural resources or tribal cultural resources might be discovered during construction. COCs CUL-1 through CUL-6 will establish adequate staffing and procedures to follow to evaluate any discovery.
California Environmental Quality Act (Pub. Resources Code, § 21084.1)	
Requires that lead agencies determine if a project could have a significant impact on historical or unique archaeological resources, or tribal cultural resources and mitigate such impacts.	Yes. No known historical resources are anticipated to be impacted by the project. Despite that, there is a possibility undocumented cultural resources or tribal cultural resources might be discovered during construction. COCs CUL-1 through CUL-6 will establish adequate

TABLE 5.4-3 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
	staffing and procedures to follow to evaluate any discovery.
"Unique" Archaeological Resource (Pub. Resources Code, § 21083.2)	
Defines a unique archaeological resource.	Yes. While this LORS is applicable, there are no "unique" archaeological resources identified within the project. Should any be identified during construction, COCs CUL-1 through CUL-6 will establish adequate staffing and procedures to follow to evaluate any discovery.
California Health and Safety Code, § 7050.5	
In the event of discovery of human remains, requires work to be halted and the coroner be notified. The coroner then must notify the NAHC if the remains are Native American in origin.	Yes. While this LORS is applicable, there are no human remains identified within the project. Despite this, there is a possibility, albeit remote, that human remains may be identified during construction. COCs CUL-1 through CUL-6 will establish adequate staffing and procedures to follow in the event of a discovery.
Public Resources Code, § 5097.98	
In the event human remains are discovered, authorizes the NAHC to assign a Most Likely Descendant (MLD) who is authorized to make recommendations for the treatment of the remains.	Yes. While this LORS is applicable, there are no known human remains identified within the project. Despite this, there is a possibility, albeit remote, that human remains may be identified during construction. COCs CUL-1 through CUL-6 will establish adequate staffing and procedures to follow in the event of a discovery.
Assembly Bill 205 Opt-In Regulations	
Provide specific information regarding cultural resources and tribal cultural resources as part of the application process.	Yes. This information has been provided during the application process.
Fresno County General Plan	
Open Space and Conservation Element	
Goal OS-J Identify and protect important cultural resources.	Yes. No known cultural resources are anticipated to be impacted by the project. Despite that, there is a possibility undocumented cultural resources might be discovered during construction. COCs CUL-1 through CUL-6 will establish adequate staffing and procedures to follow to evaluate any discovery.
Policy OS-J.1 Preservation of Historic Resources	
Policy OS-J.2 Historic Resources Consideration	
Policy OS-J.3 Minimize Impacts	
Policy OS-J.4 Cultural Resources Protection and Mitigation	Yes. COCs CUL-1 through CUL-3 will establish adequate staffing and procedures to follow to ensure archaeological site locational data remains confidential.
Policy OS-J.5 Archaeological Sites Confidentiality	
Policy OS-J.6 Native American Consultation	Yes. COCs CUL-1 through CUL-6 will establish adequate staffing and procedures to follow to ensure continued consultation with Native American representatives in the event of a discovery.

5.4.4 Conclusions and Recommendations

As discussed above, with implementation of COCs, the project would have a less than significant impact related to cultural and tribal cultural resources and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.4.5 Proposed Conditions of Certification" below. The COCs below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Impacts associated with non-jurisdictional project components require mitigation to reduce impacts to less than significant. Staff recommends the MMs as detailed in subsection "5.4.6 Recommended Mitigation Measures" below. The MMs recommended below would need to be implemented by the CPUC.

5.4.5 Proposed Conditions of Certification

CUL-1 Designated Cultural Resources Specialist. The project owner shall retain a designated Cultural Resources Specialist (CRS) who will be available to carry out mitigation measures related to cultural and tribal cultural resources for the project. The CRS shall meet or exceed the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983). The CRS shall be qualified in site detection, evaluation of deposit significance, consultation with regulatory agencies, and plan site evaluation and mitigation activities.

Verification: Within 30 days of selection of a CRS, the project owner shall provide a copy of any resume(s) to CEC for review and approval that the CRS meets the Standards.

CUL-2 Cultural and Tribal Cultural Resources Mitigation and Monitoring Plan.

Prior to the start of permitted ground disturbing activities, the CRS shall prepare a Cultural and Tribal Cultural Resources Mitigation and Monitoring Plan (CTCRMMP). The CTCRMMP shall be consistent with state law and shall include a description of monitoring personnel (such as archaeological monitors and California Native American monitors, if requested by one or more affiliated tribes), the monitoring methods, including when monitoring will be required, the authority of the monitor to halt construction should a discovery be made, contact information should a discovery be made, definition of site types typically present within the area, define the types of resources that would require that work be halted or redirected, provide the protocols for unanticipated discoveries (e.g., who to call and next steps for documentation and coordination), methods for establishing an Environmentally Sensitive Area (ESA) should one be required, review and approval protocols (e.g., define review periods for agencies and stakeholders), documentation and reporting requirements, and dispute resolution.

Verification: At least 90 days prior to the start of construction, the project owner shall provide a draft CTCRMMP to CEC for review and approval.

CUL-3 Worker Environmental Awareness Program (WEAP). Prior to the start of ground disturbance, the construction crew shall participate in on-site training on the proper procedures to follow if cultural or tribal cultural resources are uncovered during the project excavations, site preparation, or other related activities. This WEAP shall include a comprehensive discussion of applicable laws and penalties under the law, samples or visuals of artifacts that might be found in the vicinity of the project site, a discussion of what such artifacts may look like when partially buried or wholly buried and then freshly exposed, a discussion of what precontact and historic-period archaeological deposits look like at the surface and when exposed during construction, instruction that employees are to halt work in the vicinity of a discovery (within 100 feet) and requirements for working within 50 feet of an ESA. This information shall be provided in an informational brochure that outlines reporting procedures in the event of a discovery and shall be provided to all individuals working on-site.

Verification: At least 20 days prior to the start of construction, the project owner shall notify CEC that the WEAP has been scheduled and allow for participation of any tribal participants should they have requested so during CEC's ongoing tribal consultation for the undertaking.

CUL-4 Archaeological Monitoring. Archaeological monitor(s) working under the direction of the CRS shall be on-site during permitted ground disturbing activities described herein that occur within locations identified as having moderate to high sensitivity for buried archaeological deposits. Activities that shall require an archaeological monitor include mass grading that exposes previously undisturbed soils (approximately 18 inches below ground surface based on previous agricultural practices), and open trench excavation with mechanical equipment. Activities that do not expose soil profiles, such as pile driving, ditch witch trenching, and the use of hand tools, will not require monitoring unless they occur within 50 feet of an ESA.

During monitoring, the monitors shall examine the work areas for the presence of precontact artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic-period debris (e.g., metal, glass, ceramics), and/or soil discoloration that might indicate the presence of a cultural midden. Each monitor shall maintain a daily log documenting ground disturbing activity, work locations, description, and provenience of any archaeological discoveries (if any), and any necessary action items for monitoring.

The archaeological monitor shall have the authority to halt and redirect work in the event of a discovery. If archaeological resources are encountered during ground-disturbing activities, work in the immediate area shall be halted and/or redirected, and the find evaluated for listing in the California Register of Historical Resources. Should an unanticipated resource be found as eligible for the California Register of Historical Resources and avoidance is infeasible,

additional analysis (e.g., testing) may be necessary to determine if project impacts would be significant.

Archaeological monitoring may be reduced or terminated at the discretion of the CRS in consultation with CEC, as warranted by conditions such as encountering bedrock, the presence of fill soil, or negative findings during initial ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground-disturbance moves to a new location or when ground disturbance will extend to depths not previously excavated (unless those depths are within bedrock).

Verification: Within 60 days of completion of ground disturbing activities requiring monitoring, the CRS shall provide a monitoring report to the CEC for review and approval, consistent with the CTCRMMP prepared under COC CUL-2.

CUL-5 Unanticipated Discovery of Cultural or Tribal Cultural Resources. In the event that cultural or tribal cultural resources are unexpectedly encountered during ground-disturbing activities, work within 100 feet of the find shall halt and the CRS be contacted immediately to evaluate the resource. If the resource is determined by the CRS to be precontact, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the CRS and/or Native American representative determines it to be appropriate, archaeological testing for California Register of Historical Resources eligibility shall be completed. If the resource proves to be eligible for the California Register of Historical Resources and significant impacts to the resource cannot be avoided via project redesign, the CRS shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations, title 14, section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the CRS and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The CEC shall review and approve the data recovery plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System (CHRIS), per the California Code of Regulations, title 14, section 15126.4(b)(3)(C).

Verification: Should there be an unanticipated discovery of cultural or tribal cultural resources, the CRS shall comply with state law and any provisions described in the CTCRMMP. The CRS shall notify CEC within 24 hours of the discovery and invite CEC's participation in the resolution of the find.

CUL-6 Human Remains. If human remains are found, the California Health and Safety Code, section 7050.5 states that no further disturbance shall occur until

the Coroner has made a determination of origin and disposition pursuant to the Public Resources Code, section 5097.98. In the event of an unanticipated discovery of human remains, the Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will identify and notify a most likely descendant who has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the most likely descendant does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance.

Verification: Should human remains be discovered, the CRS shall comply with state law and any provisions described in the AMDP. The CRS shall notify CEC within 24 hours of the discovery and invite CEC's participation in the resolution of the find.

5.4.6 Recommended Mitigation Measures

MM CUL-1 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 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.

MM CUL-2 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.

MM CUL-3 Unanticipated Cultural Resources Discoveries.

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 in other portions of the project area with the CRS's approval. PG&E will implement the CRS's or their designee's recommendations for treatment of discovered cultural resources.

Human Remains

In the unlikely event that human remains or suspected human remains are uncovered during preconstruction 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 the "Unanticipated Cultural Resources" paragraph of this mitigation measure should apply (see previous paragraph). 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.

5.4.7 References

- Campbell-King, B. and C. Duran 2024 – Campbell-King, Breana and Christopher A. Duran. (TN 258571) *Darden Clean Energy Project Cultural Resources Technical Report: Data Request Response Set #5: Cultural Resources Inventory for the PG&E Downstream Network Upgrades, Fresno County, California*. Rincon Consultants Project No. 22-12530.
- Fresno 2024 – *Fresno County General Plan Policy Document*. General Plan Review and Revision. Final Draft. Accessed February 2024, July 2024. Accessed online at:

<https://fresnocounty.legistar.com/View.ashx?M=F&ID=12663049&GUID=CC8AC9CC-B883-4A27-AF4D-292C9D7D7EE8>

Jackson 2024 – Robert Jackson. Personal Communication with Anmarie Medin and Gabriel Roark. Lithic Analyst Expert Opinion on Darden-ISO-CJ-68. Email on file.

Meyer et al. 2010 – Jack Meyer, Jeffrey S. Rosenthal, and D. Craig Young. *Volume 1: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9, Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways*. Confidential report prepared by Far Western Anthropological Research Group, Inc., Davis, CA. Prepared for Caltrans District 6.

Moratto 1984 – Michael J. Moratto. *California Archaeology*. Orlando, FL: Academic Press, Inc.

Natural Resources Conservation Services (NRCS) 2024 – *Soil Web*. Accessed February 2024. Accessed online at: <https://casoilresource.lawr.ucdavis.edu/gmap/>

Ogaz, A., C. Felt, A. Losco 2024 – Rincon Consultants, Inc. (TN 255801) *Darden Clean Energy Project Cultural Resources Technical Report, Fresno County, California*. Rincon Consultants Project No. 22-12530. Report on file at the Southern San Joaquin Valley Information Center, California State University, Bakersfield.
CONFIDENTIAL

RCI 2023t – Rincon Consultants, Inc. (TN 252971). Section 5-1 Cultural Resources and Tribal Cultural Resources, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2024k – Rincon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2, dated March 15, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

5.5 Efficiency and Energy Resources

5.5.1 Environmental Setting

Existing Conditions

The Darden Clean Energy Project (DCEP or project) would be located within the unincorporated area of Fresno County (RCI 2023ff, Section 2, RCI 2023m, Section 5.16.1.3). The DCEP would be located on approximately 9,500 acres (IP 2024n). The project site is on undeveloped retired agricultural land.

Regulatory

Federal

There are no applicable federal laws, ordinances, regulations, and standards (LORS) that govern the efficiency of the utilization of solar photovoltaic (PV) facility and battery energy storage system (BESS).

State

California 2022 Energy Efficiency Standards for Residential and Nonresidential Buildings

Green Building Standards Code, California Code of Regulations, Title 24. The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) applies to the planning, design, operation, construction, use, and occupancy of newly constructed power plants and their ancillary facilities and requires the installation of energy efficient indoor infrastructure.

Senate Bill 100—The 100 Percent Clean Energy Act of 2018

Senate Bill (SB) 100 (Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. The bill also requires the Public Utilities Commission, California Energy Commission, and State Air Resources Board to utilize programs authorized under existing statutes to meet the state policy goal of 100 percent of total retail sales of electricity in California provided by eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Local

There are no applicable local LORS that govern the efficiency of the utilization of solar PV and BESS.

Cumulative

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The CEQA Guidelines require that the discussion reflect the severity of the impacts and the likelihood of their occurrence but need not provide as much detail as the discussion of the impacts attributable to the project alone.

There are no cumulative projects listed in **Appendix A, Table A-1** that when combined with DCEP would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

5.5.2 Environmental Impacts

EFFICIENCY AND ENERGY RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, energy

5.5.2.1 Methodology and Thresholds of Significance

Methodology

The methodology includes the above environmental checklist.

Thresholds of Significance

There are no thresholds of significance applicable to this project. However, the project would have a significant impact if its construction and operation significantly impact the available energy resources.

5.5.2.2 Direct and Indirect Impacts

- a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

Construction— *Less Than Significant Impact*

Based on the analysis below, construction of the project would have a less than significant impact on local and regional energy supplies and would not consume energy resources in a wasteful, inefficient, or unnecessary manner.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction would take approximately 36 months to complete. Construction activities would include site preparation, concrete pouring, installation of the PV panel system, BESS facility, substation, and generation-intertie line. Throughout these construction activities, various equipment, such as bulldozers, excavators, cranes, and trucks would consume nonrenewable energy resources, primarily fossil fuels such as gasoline and diesel. It is anticipated that fossil fuels used by this equipment during construction would be used efficiently and would not result in a long-term depletion of these energy resources or permanently increase the project's reliance on them.

The idling time of construction equipment during the construction phase would be minimized by either shutting off equipment when not in use or reducing the idling time to a maximum of 5 minutes. Nonhazardous Construction waste would be recycled or disposed at a Class II/III facility (RCI 2023bb).

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of the switchyard would take approximately 36 months to complete. Construction activities and the use of various equipment, such as bulldozers, excavators, cranes, and trucks would consume nonrenewable energy resources, primarily fossil fuels such as gasoline and diesel. It is anticipated that fossil fuels used by these equipment during construction would be used efficiently and would not result in a long-term depletion of these energy resources or permanently increase the project's reliance on them.

Operation— *Less Than Significant Impact*

Based on the analysis below, the project's use of fuel during operations would have a less than significant effect on energy supplies and resources. Furthermore, project operations would not consume energy in a wasteful, inefficient or unnecessary manner.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The project would generate electricity utilizing solar photovoltaic (PV) panels. The project would consist of up to 3.1 million panels with a total capacity of 1,150 megawatts (MW). Solar energy is an abundant resource that cannot be depleted.

Power generation would contribute to charging the battery energy storage system (BESS). Any excess power generation from the solar facility may be provided to the electrical grid. The BESS would have the capacity to store and discharge 1,150 MW of

electricity for 4-hours. Grid electricity would support the operations and maintenance (O&M) facility, and critical loads, in stand-by mode, when the solar PV and BESS are unavailable to provide electricity.

The project would include three liquid petroleum gas-fired backup generators (gensets) to support the substation control building and for charging the batteries for the protective systems when power from the electricity grid, solar PV, and BESS are all unavailable. The gensets would be Power Solutions International 8800CAC 150kilowatt (kW) liquid petroleum gas (LPG) fired gensets. They would be located at the step-up substation and step-down substation (RCI 2024ff). Commercially available solar PV panels have an efficiency between 15 and 20 percent. The inefficiency of a solar PV cell can be attributed to the sunlight's wavelength, reflection, and operating temperature of the solar cell (EERE 2024).

Light composition (photons) has different wavelengths and by the time sunlight reaches the surface of the solar cell its wavelength changes from ultraviolet to infrared. Some of the photons are reflected, passed through, or converted to heat when they hit the surface of the cell. The remaining photons have the right amount of light energy for the cell to produce electric current.

Solar cells operate efficiently at low temperatures. High temperatures can cause the cell's material (semiconductor) properties to change. This change slightly increases electric current and largely decreases voltage. Inconsistent current and voltage affect the cell's ability to efficiently convert energy to electricity (EERE 2024).

BESS's have a round-trip efficiency of approximately 85 percent. The efficiency is the ratio of useful energy output divided by useful energy input (NREL 2024). Their inefficiency can be attributed to heat and electrical transmission losses.

The gensets are expected to be permitted to operate for no more than 50 hours per year each, for operational and reliability purposes (i.e., readiness testing and maintenance). The total quantities of LPG for the LPG-fired gensets would be approximately 8,400 cubic feet per year (RR 2024).¹ LPG is produced from liquid components of natural gas processing (US DOE 2024). There are 12 underground natural gas storage fields in California with a total working gas capacity of 375 billion cubic feet (DOC 2021). The project's use of fuels would constitute a small fraction (less than 0.000002 percent of processed natural gas) of available resources, and the state's supply is more than sufficient to meet necessary demand.

PG&E Utility Switchyard and Downstream Network Upgrades

The proposed switchyard would not consume energy or energy resources. The switchyard consists of high-voltage equipment, such as circuit breakers, transformers, and switches, used to direct electricity to the electrical grid.

1 Calculated as: (3 gensets x 56 cubic feet per hour x 50 hours per year) = 8,400 cubic feet per year.

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction— *Less Than Significant Impact*

Based on the analysis below, construction of the project would not be in conflict with or obstruct a state or local plan for renewable energy or energy efficiency and thus impacts would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The project is committed to energy-efficient construction and would implement measures to reduce energy consumption during construction process. The project would recycle construction and demolition debris in compliance with Assembly Bill 341 and State Bill 1018. Moreover, the project would also comply with the California Green Building Code (RCI 2023ff).

PG&E Utility Switchyard and Downstream Network Upgrades

The project is committed to energy-efficient construction and would implement measures to reduce energy consumption during construction process. The project would recycle construction and demolition debris in compliance with Assembly Bill 341 and State Bill 1018.

Operation— *No Impact*

Based on the analysis below, project operations would not impact a state or local plan for renewable energy or energy efficiency.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During operation, the project would utilize solar energy to provide up to 1,150 MW of electricity to charge the BESS. Alternatively, the BESS facility could receive and provide electricity to the grid to support peak-load demand. Should the project contract to provide electricity, it would be with Pacific Gas and Electric (PG&E). PG&E is the electricity service provider in Fresno County. PG&E has committed to meeting California's Renewable Portfolio Standard through its Integrated Resource Plan (PG&E 2022). PG&E's 2022 Power Content Label's Base Plan includes 38.3 percent Eligible Renewable, which includes 4.6 percent biomass and biowaste, 0.5 percent geothermal, 1.8 percent eligible hydroelectric, 22 percent solar, and 9.4 percent wind (PG&E 2022a). The project would increase renewable energy generation capacity in PG&E and the State's portfolio. Furthermore, the project would be consistent with SB 100.

The project would comply with the California Green Building Code through conformance with the California Building Standard Codes.

The project's use of LPG for the emergency gensets would not obstruct or inhibit the state from achieving its energy-related goals. These gensets would be limited in use.

Through energy-efficient design and increased renewable electricity generation, the project would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency and, therefore, would have no impact on those plans.

PG&E Utility Switchyard and Downstream Network Upgrades

The switchyard consists of high-voltage equipment used to direct electricity to the electrical grid. The PG&E's switchyard or downstream networks would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency and, therefore, would have no impact on those plans.

5.5.2.3 Cumulative Impacts

Construction and Operation— *No Impact*

There are no cumulative projects that when combined with DCEP would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The quantities of LPG used for this project would be too small to have a cumulative impact when combined with other projects. Also, since the DCEP would be a renewable project, it would not conflict with nor obstruct state or local plans for renewable energy or energy efficiency.

5.5.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.5-1 below details staff's determination of conformance with applicable state LORS to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that the proposed jurisdictional components of the project would be consistent with all applicable LORS.

TABLE 5.5-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis For Determination
Senate Bill 100—The 100 Percent Clean Energy Act of 2018.	Yes. The project would comply with SB100 through its energy-efficient design and increasing renewable electricity generation.
California 2022 Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Standards Code, California Code of Regulations, Title 24.	Yes. The project would comply with the California Green Building Code through conformance with the California Building Standard Codes.

5.5.4 Conclusions and Recommendations

As discussed above, the jurisdictional and non-jurisdictional project components would have a less than significant impact related to efficiency and energy resources and the jurisdictional project components would conform with applicable LORS.

5.5.5 Proposed Conditions of Certification

There are no proposed conditions of certification for efficiency and energy resources.

5.5.6 Recommended Mitigation Measures

There are no recommended mitigation measures for efficiency and energy resources.

5.5.7 References

- EERE 2024 – Office of Energy Efficiency & Renewable Energy (EERE). Solar Performance and Efficiency. Accessed on: August 8, 2024. Accessed online at: <https://www.energy.gov/eere/solar/solar-performance-and-efficiency>
- NREL 2024 – National Renewable Energy Laboratory (NREL). Annual Technology Baseline. Utility-Scale Battery Storage. Accessed on: August 8, 2024. Accessed online at: https://atb.nrel.gov/electricity/2024/utility-scale_battery_storage
- PG&E 2022a – Pacific Gas and Electric (PG&E). 2022 Integrated Resource Plan. Accessed on: January 3, 2024. Accessed online at: <https://www.pge.com/en/about/doing-business-with-pge/integrated-resource-planning.html>
- PG&E 2022b – Pacific Gas and Electric (PG&E). 2022 Power Content. Accessed on: January 3, 2023. Accessed online at: <https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf>
- RCI 2023bb – Rincon Consultants, Inc. (TN 252981). Chapter 4 Engineering, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023cc – Rincon Consultants, Inc. (TN 252982). Section 5-11 Waste Management, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ff – Rincon Consultants, Inc. (TN 259510). Updated Darden Clean Energy Project Description_Redline, dated October 9, 2024. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RR 2024 – Rolls Royce. Gas Generator Set. MTU 8V0110 GS150. Accessed online at: https://www.mtu-solutions.com/content/dam/mtu/products/power-generation/powergeneration-product-list-latest/231262_PG_Spec_8V0110GS150_150kW_3D_60%20Hz.pdf/_jcr_content/renditions/original./231262_PG_Spec_8V0110GS150_150kW_3D_60%20Hz.pdf
- SWRCB 2024 – California State Water Resources Control Board. Land Disposal Program. dated March 29, 2023. Accessed online at:

https://www.waterboards.ca.gov/water_issues/programs/land_disposal/treated_wood_waste.html#:~:text=Class%20III%20and%20II/III,found%20on%20the%20About%20page

US DOE 2024 – U.S. Department of Energy. Energy Efficiency & Renewable Energy (EERE). Alternative Fuels Data Center. Propane Production and Distribution. Accessed on: August 8, 2024. Accessed online at: <https://afdc.energy.gov/fuels/propane-production>

5.6 Geology, Paleontology, and Minerals

5.6.1 Environmental Setting

Existing Conditions

The project is proposed on approximately 9,500 acres in an agricultural area of unincorporated Fresno County, south of the community of Cantua Creek. Land cover types are predominantly lands retired from irrigated agriculture that have been irregularly farmed over the last 10 years and seasonally or annually disked when not growing crops, plus associated dirt roads, field and road shoulders, basins, ditches, and berms. Some active farming occurred in limited areas on the project site during 2023. Surrounding properties include retired and active agricultural lands. The project generation-intertie (gen-tie) line spans privately-owned land on the western portion of the project site with active agriculture land-cover. The San Luis Canal, a segment of the California Aqueduct, bisects the gen-tie parcels, extending generally north-south. Dirt and paved roads border and separate each land-cover type.

The regional and local potential for the occurrence of geologic hazards and paleontological, geological, and mineral resources are discussed below.

Paleontological Resources

Paleontological resources are fossils and fossiliferous deposits consisting of vertebrate fossils, invertebrate fossils, plant, trace fossils and other data. Paleontological resources are older than recorded human history or middle Holocene (approximately 5,000 radiocarbon years). (SVP 2010)

Fossils are important scientific and educational resources because of their use in documenting the present and evolutionary history of particular groups of now-extinct organisms. Fossils are important in reconstructing the environments in which those organisms lived; in determining the relative ages of the strata in which they occur; and the geologic events that resulted in the deposition of the sediments that buried them. Fossils are considered a nonrenewable scientific resource and are afforded protection under several federal, state, and local laws, ordinances, and regulations because most, if not all, of the organisms they represent no longer exist. (SVP 2010)

Paleontological Potential. The paleontological potential of a geologic unit exposed in a project area is inferred from the abundance of fossil specimens and previously recorded fossil sites in exposures of the unit, or of similar units in similar geological settings. The underlying assumption is that a geologic unit is likely to yield fossil remains in a quantity and of a quality similar to those previously recorded from the unit elsewhere in the region. (SVP 2010)

As described in SVP (2010), the paleontological potential of a geologic unit reflects:

- The potential for yielding abundant or significant vertebrate fossils or for yielding a few significant vertebrate, invertebrate, plant, or trace fossils.
- The importance of recovered evidence for proper stratigraphic interpretation, age determination of a geologic unit, paleoenvironmental and paleoclimatic reconstructions, or for understanding evolutionary processes.

Determining the paleontological potential of a geologic unit helps to determine which units may require mitigation to reduce potential impacts to paleontological resources during the development of the project. In its guidelines for assessment and mitigation of adverse impacts to paleontological resources, the Society of Vertebrate Paleontology (SVP) established the following four categories of paleontological potential of geologic units: high, low, undetermined, and none. These categories are described in more detail in **Table 5.6-1**. (SVP 2010)

TABLE 5.6-1 DEFINITIONS OF PALEONTOLOGICAL POTENTIAL	
Rating	Definition
High	Geologic units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional scientifically important paleontological resources. Geologic units that contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and geologic units which may contain new vertebrate deposits, traces, or trackways, are also classified as having High Potential.
Low	Geologic units with low potential are known to produce significant fossils only on rare occasions, and only preserve fossils in rare circumstances such that the presence of fossils is the exception not the rule, for example, basalt flows or recent colluvium.
Undetermined	Geologic units for which little information is available concerning their geologic context (depositional environment, age) and potential to contain paleontological resources are considered to have undetermined potential. The paucity of data is usually from a lack of study in that unit or because of high variability in the unit's lithology. Typically, further study is necessary to determine whether these units have high, low, or no potential to contain scientifically significant paleontological resources. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.
None	Geologic units with no potential are those that formed at high temperatures and pressures, deep within the Earth, such as plutonic igneous rocks, and high-grade metamorphic rocks. Since the environment in which these rocks formed is not conducive to the preservation of biological remains, they do not contain fossils. Manmade fill also is considered to possess no paleontological potential.

Source: SVP 2010

Geological Hazards and Resources

Regional Geology. The project site is at the western edge of the Great Valley geomorphic province adjacent to the Coast Ranges geomorphic province (CDOC 2002). The western portion of Fresno County, where the project site is located, is dominated by rocks of the Great Valley Sequence, which consist of marine and non-marine

sedimentary rocks such as sandstone, shale, and conglomerate that were deposited during the Cretaceous and Tertiary periods (RCI 2023m).

Local Geology and Stratigraphy. The geologic units identified at and in the vicinity of the project site include Quaternary basin deposits, Quaternary fan deposits, and Quaternary older alluvium. Two additional geologic units, the Tulare and Oro Loma formations are not mapped at the surface directly beneath any project components but may be encountered by subsurface excavations (RCI 2023s). The geologic units identified at and in the vicinity of the project site are described in detail below.

- Quaternary basin deposits (Qb) underlie the eastern part of the solar facility site (RCI 2023s). Quaternary basin deposits generally consist of late Holocene-aged (i.e. younger than 5,000 years old) fine-grained sediments that are deposited during flooding events of the major streams and rivers of the San Joaquin Valley. (Jennings and Strand 1958)
- Quaternary fan deposits (Qf) underlie most of the project site, including the gen-tie line easement, the gen-tie line extension, the battery energy storage system (BESS), Operations and maintenance (O&M) facilities, and step-up substation, and much of the solar facility site (RCI 2023s). In this region, Quaternary fan deposits generally consist of a variety of late Holocene-aged sediments ranging from coarse- to fine-grained alluvial fan sediments deposited by ephemeral streams and mudslides/debris flows originating from the Coast Ranges. (Jennings and Strand 1958; Miller et al. 1971)
- Quaternary older alluvium (Qoa) underlies the western part of the utility switchyard (RCI 2023s). Quaternary older alluvium generally consists of Pleistocene-aged, dissected gravel and sand. (Dibblee and Minch 2007)
- Tulare Formation (QTt) is immediately west of the westernmost part of the utility switchyard (RCI 2023s). The Tulare Formation generally consists of lower Pleistocene- and upper Pliocene-aged weakly lithified, gravel, sand, and clay beds. (Dibblee and Minch 2007)
- Oro Loma Formation (Tol) is west of the project site and generally consists of Pliocene-aged gray to red pebble conglomerate, sandstone, and claystone. (Dibblee and Minch 2007; RCI 2023s)

Subsurface Soils. Four soil borings (Boring IDs SB-1 through SB-4) were completed on September 9, 2023, for the field exploration conducted for the utility switchyard proposed at the west end of the project. These borings were drilled to depths of between approximately 18.3 feet and 51.5 feet below the ground surface. Borings SB-1 and SB-2 encountered approximately 5 to 7.5 feet of very stiff surficial Sandy Lean Clay, approximately 2 to 3 feet of medium dense to dense Clayey Sand with Gravel with interbedded layers of Silty Sand, 10 to 15 feet of loose to dense Silty Sand. Borings SB-3 and SB-4 encountered approximately 6 to 8 feet of surficial Lean Clay and Clayey Sand, underlain by 5 to 11 feet of very dense Poorly Graded Sand with Gravel. Beneath these materials, the borings encountered interbedded layers of Poorly Graded Sand with

Clay or Gravel, Lean Clay, Sandy Lean Clay, Clayey Sand with layer thicknesses varying between approximately 6.5 and 15.5 feet. (RCI 2024h)

The geotechnical investigation for the remainder of the project site included drilling 156 soil borings and conducting 39 cone penetration test (CPT) explorations, between January and August 2023. The borings and CPTs were advanced throughout the approximately 9,100-acre solar array field and in the general areas of the planned step-up substation, BESS, O&M facility, and Pacific Gas and Electric Company (PG&E) utility switchyard as well as along the proposed alignment of the approximate 15-mile long gen-tie line. The soil borings range in depths from 21.5 to 51.5 feet below the ground surface and the CPTs range in depths from 21 to 22 feet below the ground surface. (RCI 2024e; RCI 2024f)

Subsurface conditions encountered within the solar array area (including the substation and BESS locations, Boring IDs B-1 through B-140) generally consisted of soft to hard Fat and Lean Clay with varying amounts of sand with occasional minor interbedded layers of very loose to medium dense Poorly Graded Sand, Silty Sand, and Clayey Sand. (RCI 2024e; RCI 2024f)

Subsurface conditions along the alternate facilities area (Boring IDs SW-1, Sub-2, and E-2) generally consisted of loose to very dense Clayey Sand, Silty Clayey Sand, and Poorly Graded Sand with Clay with minor gravel. (RCI 2024e; RCI 2024f)

Subsurface conditions encountered along the proposed gen-tie alignment (Boring IDs T-1 through T-10) generally consisted of interbedded layers of soft to very stiff Sandy Fat Clay, Sandy Lean Clay, Lean Clay, and Lean Clay with Sand, and very loose to very dense Clayey Sand. (RCI 2024e; RCI 2024f)

Faulting and Seismicity. Although most of Fresno County is situated within an area of relatively low seismic activity, the faults and fault systems that lie along the eastern and western boundaries of Fresno County, as well as other regional faults, have the potential to produce high-magnitude earthquakes throughout the county. Therefore, any specific location within the project area is subject to seismic hazards of varying degrees, depending on the proximity to and length of nearby active faults, the local geologic and topographic conditions, and the magnitude of seismic events. Seismic hazards primarily include ground shaking and ground rupture along fault traces and possible liquefaction induced by strong ground shaking. (RCI 2023m)

The California Geological Survey (CGS) has established Earthquake Fault Zones in accordance with the 1972 Alquist-Priolo Earthquake Fault Zone Act. The Earthquake Fault Zones consist of boundary zones surrounding well defined active faults or fault segments. The project site does not lie within a mapped Alquist-Priolo Earthquake Fault Zone. (CDOC 2023c)

According to the United States Geological Survey (USGS) Quaternary Fault and Fold Database of the United States, the closest active fault to the project site is within the

Nunez fault zone, located approximately 20 miles to the northwest (USGS 2017). The San Andreas fault zone is located approximately 40 miles west of the project site.

Table 5.6-2 lists the faults within 40 miles of the project site. (CDOC 2023c; RCI 2023m)

TABLE 5.6-2 FAULTS IN PROXIMITY TO THE PROJECT SITE	
Fault	Approximate Distance from the Project Site (miles)
Nunez fault	20
O'Neill fault system	35
Panoche Hills fault	30
San Andreas fault zone	40
San Joaquin fault	40

Sources: CDOC 2023c; RCI 2023m

The USGS Unified Hazard Tool (USGS 2024) was used to calculate estimated peak ground accelerations and the estimated magnitude of the maximum credible earthquake (MCE). From a design perspective, the tool evaluated the closest fault to the project site that is anticipated to have the most significant effect on the project site. The direction of this fault from the project site was not noted in geotechnical consultant’s report. The fault is approximately 5.25 miles (8.45 kilometers) from the project site. An estimated 5.84 earthquake could occur on the fault. (RCI 2024e)

Based on the USGS Design Maps Summary Report, using the American Society of Civil Engineers (ASCE 7-16) standards, the project owner’s geotechnical consultant calculated a peak ground acceleration (PGA) at the project site of 0.6g (RCI 2024e). Based on the USGS Unified Hazard Tool, the project site has a mean magnitude of 6.3 (USGS 2024).

Strong Ground Motion. Although the project site is not within an active Earthquake Fault Zone as defined by the Alquist-Priolo Act (CDOC 2023), the project site is in an area with the potential for ground shaking that may cause structural or property damage in the event of an earthquake. The intensity of ground motion depends upon the magnitude of an earthquake, the distance from the epicenter, and the geology between the epicenter and the site. In softer materials, such as unconsolidated soil, ground motion is likely to amplify because the seismic wave velocity decreases and the wave amplitude increases. In comparison, in harder materials, such as bedrock, ground motion may lessen because seismic wave velocity increases, wave amplitude decreases, and ground shaking intensity decreases. (RCI 2023m)

The geotechnical consultant for the project owner used the USGS Unified Hazard Tool (USGS 2024) to calculate estimated PGA based on a given time horizon and on-site specific parameters and published earthquake hazard and probability maps (RCI 2024e). **Table 5.6-3** shows the PGA associated with each project component.

TABLE 5.6-3 FAULTS IN PROXIMITY TO THE PROJECT SITE

Project Component	Latitude/Longitude	Estimated PGA	Potential for Damage
Solar Array Field	36.492679, -120.205786	0.6g	Weak perceived shaking, no potential damage
Utility Switchyard	36.424185, -120.402854	0.6g	
Gen-Tie Line	36.443734, -120.339706	0.6g	
Step-Up Substation, BESS, O&M Facility	36.475689, -120.216703	0.6g	
	36.441673, -120.240167	0.6g	

Source: RCI 2024e

Mineral Resources

In the context of the California Environmental Quality Act (CEQA), mineral resources are land areas or deposits deemed significant by the California Department of Conservation (CDOC). A mineral resource is a concentration of natural inorganic materials or fossilized organic material occurring in such form, quantity, or quality that there are reasonable prospects for economic extraction. Inorganic mineral resources include non-fuel materials such as aggregate (sand and gravel), metals (gold, silver, and iron), and industrial minerals (clays, limestone, and gypsum). Petroleum resources include crude oil and natural gas.

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the county. Extracted resources include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone). Aggregate and petroleum are the county's most significant extractive resources and play an important role in maintaining the county's overall economy. (Fresno County 2024a)

The State Mining and Geology Board (SMGB) is responsible for administration of a mineral lands inventory process termed classification designation. Areas are classified based on geologic factors without regard to existing land use and land ownership. The SMGB has established Mineral Resources Zones throughout most of California. The project site vicinity is one of the few areas where Mineral Resources Zones mapping was not completed. (CDOC 1988)

The CDOC Division of Mine Reclamation's list of mines, referred to as the AB 3098 List and regulated under the State Surface Mining and Reclamation Act (SMARA), lists 9 mines in Fresno County (CDOC 2016, 2023a). The CGS mapped sparse sand and gravel mines in the southwestern, northwestern, and north-central portions of the county. A placer gold mine and a dimension stone mine are in the north-central portion of the county (CDOC 2020). The closest mine to the project site is an open-pit gemstone mine approximately 14-miles southwest in San Benito County. (CDOC 2023a)

According to the CDOC Geologic Energy Management Division (CalGEM) online Well Finder interactive map, the gen-tie line passes through the abandoned Cantua Creek and Turk Anticline oil fields. There are numerous wells mapped as associated with the abandoned Cantua Creek and Turk Anticline oil fields; however, all but two located about 1-mile south of the proposed gen-tie line, are identified as plugged, idle, or cancelled. These two are listed as new oil and gas wells, but no additional information is available. (CDOC 2023b).

According to the USGS Mineral Resources online spatial data interactive map, two gravel quarries are mapped about 1-mile south of the west end of the project site adjacent to Cantua Creek (USGS 2011).

Several issues influence the extraction of mineral resources in Fresno County, including the location of geologic deposition, the potential for impacts to the environment, commercial value, and land use conflicts. At the project site, the geologic units at the surface and in the subsurface are widespread alluvial deposits that occur throughout and adjacent to the San Joaquin Valley; these units are not unique in terms of commercial value (RCI 2023m). Thus, the potential for rare recreational, commercial, or scientific deposits is very low.

Regulatory

The project would be required to comply with all applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) and would need to obtain building permits that would be issued by the California Energy Commission (CEC). The issuance of the building permits and oversight provided by the CEC via the CEC's delegate chief building official (DCBO) would confirm that the project complies with the applicable regulatory framework.

Federal

Paleontological Resources

No federal regulations related to paleontological resources apply to the project facility design.

Geologic and Mineral Resources

No federal regulations related to geologic or mineral resources apply to the project facility design.

State

Paleontological Resources

The CEQA lead agency having jurisdiction over a project is responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes. The lead agency with the responsibility to ensure that fossils are protected

during construction is the CEC. Public Resource Code (PRC) Section 21081.6, entitled Mitigation Monitoring Compliance and Reporting, requires that the CEQA lead agency demonstrate project compliance with mitigation measures developed during the environmental impact review process.

Geologic Hazards, Geologic and Mineral Resources

California Building Code. The California Building Code (CBC) prescribes standards for constructing safer buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years, with the 2022 CBC effective on January 1, 2023 and updated with a July 2024 Supplement. (CBC 2022)

Local

Paleontological Resources

Fresno County General Plan – Open Space and Conservation Element. The Historic, Cultural, and Geological Resources section in the Open Space and Conservation Element serves as the primary policy statement by the Board of Supervisors regarding the preservation of historical, cultural, and geological resources. The goal and policies in this section seek to preserve and promote the historical, archeological, paleontological, geological, and cultural resources of the county through development, review, acquisition, encouragement of easements, coordination with other agencies and groups, and other methods. (Fresno County 2024a)

Fresno County's history includes at least five indigenous Native American tribes and Spanish, Mexican, and American colonization. There are many archeological and historic sites and a large stock of historically significant buildings and landmarks in the county. The county also contains several unique geological features and geological resources of bygone eras. (Fresno County 2024a)

Professional Standards

Society of Vertebrate Paleontology. The Society of Vertebrate Paleontology (SVP) is an international organization of professional paleontologists, has established guidelines and standard procedures that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation (SVP 2010). This assessment was prepared in accordance with these guidelines (RCI 2023s).

Geologic Hazards, Geologic and Mineral Resources

Fresno County Code of Ordinances. The Fresno County Code of Ordinances (COO) largely adopts the CBC with specific edits. Title 15 – Building and Construction and Title 17 – Divisions of Land include building and construction requirements to reduce hazard potential that are applicable to all new construction, including the project (Fresno County 2024b).

These requirements include, but are not limited to:

- Grading and Excavation – Chapter 15.28. Adopts Chapter 18, Chapter 33, and Appendix J of the 2022 CBC and Section R300 of the 2022 California Residential Code except as noted in Chapter 15.28.020 of the COO. (CBC 2022; CCR 2022; Fresno County 2024b)
- Preliminary Soils Report – Chapter 17.32.030. Requires a Preliminary Soils Report to be prepared by a registered civil engineer. (Fresno County 2024b)

Fresno County General Plan

Health and Safety Element. The Seismic and Geologic Hazards section of the Health and Safety Element serves as the primary policy statement by the Board of Supervisors for implementing safety policies and programs to protect the community from risks associated with seismic and geologic hazards in Fresno County. (Fresno County 2024a)

Although most of Fresno County is situated within an area of relatively low seismic activity by comparison to other areas of the state, the faults and fault systems that lie along the eastern and western boundaries of the county, as well as other regional faults, have the potential to produce high-magnitude earthquakes throughout the county. The principal earthquake hazard is ground shaking. Other geologic hazards in Fresno County include landslides, subsidence, expansive soils, erosion. (Fresno County 2024a)

The goal and policies in this section seek to ensure that new buildings and facilities are designed to withstand seismic and geologic hazards and to minimize the loss of life, injury, and property damage due to seismic and geologic hazards. (Fresno County 2024a)

Open Space Conservation Element. The Mineral Resource section of the Open Space Conservation Element serves as the primary policy statement by the Board of Supervisors regarding mineral resources. The goal and policies in this section seek to preserve the future availability of mineral resources and promote the reasonable, safe, and orderly operation of mining and extraction activities in Fresno County, while adequately mitigating the impacts to surrounding environmental, aesthetic, and adjacent land uses. Related policies are included in Section C, River Influence Areas, of the Agricultural and Land Use Element. Other relevant policies are included in the Kings River Regional Plan. (Fresno County, 2024a)

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the county. Extracted resources include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone). Aggregate and petroleum are the county's most significant extractive resources and play an important role in maintaining the county's overall economy. (Fresno County 2024a)

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on geology, paleontology, and minerals to be potentially significant. A master list of cumulative projects located within Fresno County is provided in **Appendix A, Table A-1**.

The cumulative project setting for geology, paleontology, and minerals includes all projects which may expose people or property to geologic hazards or destroy geologic, mineral, and paleontological resources of commercial, scientific, or recreational value. A project may have these potential impacts if it includes construction, excavation of native materials, groundwater pumping, or fossil fuel production.

5.6.2 Environmental Impacts and Mitigation

GEOLOGY, PALEONTOLOGY, AND MINERALS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv. Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

GEOLOGY, PALEONTOLOGY, AND MINERALS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Be on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property?*	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by CEQA Guidelines, Appendix G, geology and soils and minerals.

*Geology and Soils question (d) reflects the current 2022 California Building Code (CBC 2022), effective January 1, 2023, which is based on the International Building Code (IBC 2021).

5.6.2.1 Methodology and Thresholds of Significance

To assess potential impacts on unique geologic features and effects on mineral resources, staff has reviewed geologic and mineral resource maps for the surrounding area, as well as site-specific information provided by the project owner, to determine if geologic and mineralogic resources exist in the area. The geologic map and literature review included maps published by Dibblee and Minch (Dibblee and Minch 2007), Jennings and Strand (Jennings and Strand 1958), and Miller et al. (Miller et al. 1971).

The current CBC (CBC 2022) provides geotechnical and geological investigation and design guidelines that engineers shall follow when designing a facility. Thus, the criterion used to assess the significance of a geologic hazard includes evaluating each hazard's potential impact on the design, construction, and operation of the proposed facility. Geologic hazards include faulting and seismicity, liquefaction, dynamic

compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, seiches, and others as may be dictated by site-specific conditions. (CBC 2022)

The analysis also relied on project-specific preliminary geotechnical engineering reports prepared by the project owner's geotechnical consultant. The geotechnical engineering reports include the results of soil borings, field electrical resistivity testing, laboratory thermal resistivity testing, laboratory corrosion testing, and pile load testing, as well as geotechnical engineering recommendations for the project features. Geologic hazards evaluated within the reports included pile drivability, shallow bedrock, frost potential, expansive soils, shallow groundwater, and liquefaction. (RCI 2024e; RCI 2024h)

To develop a baseline paleontological resources inventory of the project study area (RCI 2023v), the project owner's paleontological consultant, reviewed published geologic maps to identify the geologic units present at and below the surface within the project site (Dibblee and Minch 2007; Jennings and Strand 1958; Miller et al. 1971). The paleontological consultant also reviewed the online paleontological collection databases of the University of California Museum of Paleontology (UCMP) (Holroyd 2023; UCMP 2023), Paleobiology Database (PBDB 2023), and consulted primary literature (Miller et al. 1971; Dalrymple 1980; Jefferson 2010) to assess the paleontological sensitivity of the project site. (RCI 2023v)

Based on a review of historical and modern aerial imagery, the project site contains no bedrock exposures and has been extensively disturbed with grading and agricultural activities. Therefore, a paleontological resources field survey was not conducted. (RCI 2023v)

Paleontological sensitivity ratings of the geological formations were assigned based on the findings of the records search and literature review as well as on the potential effects to nonrenewable paleontological resources from project construction and operation following SVP (SVP 2010) guidelines. Construction-related impacts that typically affect or have the potential to affect paleontological resources include mass excavation operations, drilling/borehole excavations, trenching/tunneling, and grading. Ground-disturbing construction activities associated with the project would mainly consist of grading, boring, trenching, and excavation. (RCI 2023v)

5.6.2.2 Direct and Indirect Impacts

An assessment of the potential impacts to geologic, mineralogic, and palaeontologic resources, and from geologic hazards is provided below. The conditions of certification (COCs) are the mechanism by which the CEC mitigates potential impacts and maintains ongoing compliance with LORS applicable to geologic hazards and the protection of geological, paleontological, and mineral resources.

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i. **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?**¹

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, impacts associated with rupture of a known earthquake fault on project construction and operation would be less than significant impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

When a fault ruptures and creates an earthquake, the ground surface may rupture. Although most of Fresno County is situated within an area of relatively low seismic activity, the faults and fault systems that lie along the eastern and western boundaries of Fresno County, as well as other regional faults, have the potential to produce high-magnitude earthquakes throughout the county. (RCI 2023m)

There are no known faults (CDOC 2015) and no zones of required investigation (CDOC 2023c) within the project site. The closest zone of required investigation to any project component is a section of the Nunez fault (Alcalde Hills), located approximately 20 miles southeast of the project site. From a design perspective, the fault considered to have the most significant effect at the site is about 5.25 miles from the project site. An estimated 5.84 earthquake could occur on the fault. (RCI 2024e)

Due to the distance to known and mapped faults, the construction, operation, and maintenance of the jurisdictional would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. Therefore, the impacts of the project on the safety of people or structures from a rupture of a known earthquake fault would be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the above section, the construction, operation, and maintenance of non-jurisdictional project components would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. Therefore, the impacts of the project on the safety of people or structures from a rupture of a known earthquake fault would be less than significant.

¹ Refer to Division of Mines and Geology Special Publication 42
GEOLOGY, PALEONTOLOGY, AND MINERALS
5.6-13

ii. Strong seismic ground shaking?

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, impacts associated with strong seismic ground shaking on project construction would be less than significant with the implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, and **MMs GEO-1 to GEO-3**, **GEN-1**, and **CIVIL-1**. See **Section 4.1, Facility Design** for a description of COCs **GEN-1**, **CIVIL-1**, and **STRUC-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The project is not within a mapped active Earthquake Fault Zone as defined by the Alquist-Priolo Act. However, the project is subject to ground shaking from earthquakes generated on faults and fault systems near the eastern and western boundaries of Fresno County, and from faults outside the county. Regional shaking from an earthquake can result in structural damage and can trigger other geologic hazards such as liquefaction.

Prior to the issuance of a building permit for the final design of the jurisdictional project components, COCs **GEO-1** and **GEO-2** require the project owner to complete and submit preliminary soil and geotechnical reports to the CEC for review and approval. These reports shall include recommendations for mitigation to further reduce, to the extent feasible, hazards from strong seismic ground shaking. These recommendations shall be incorporated into the design of the jurisdictional components.

During design and construction of the jurisdictional project components, compliance with COCs **GEO-1** and **GEO-2**, and Facility Design COCs **GEN-1**, **CIVIL-1**, and **STRUC-1** (see **Section 4.1, Facility Design**) would reduce strong seismic ground shaking risks to less than significant. With mitigation, the jurisdictional project components would directly or indirectly expose people or property to less than significant impacts associated with strong seismic ground shaking.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation provided in the section above, it is recommended that design and construction of the non-jurisdictional project components comply with **MMs GEO-1 to GEO-3**, **GEN-1**, and **CIVIL-1**. With mitigation, construction of the non-jurisdictional project components would directly or indirectly expose people or property to less than significant impacts associated with strong seismic ground shaking.

Operation— *Less than Significant Impact*

Based on the analysis below, impacts associated with strong seismic ground shaking on project operation would be less than significant with the implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, and **MMs GEO-1 to GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During operation and maintenance of the proposed project, the jurisdictional project components could be subject to strong seismic ground shaking and associated hazards. Continued compliance with COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, would not expose people or property, directly or indirectly, to significant impacts associated with strong seismic ground shaking. With mitigation, the impacts of the jurisdictional project components on the safety of people or structures from strong seismic ground-shaking during operations and maintenance would be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation provided in the section above, it is recommended that operation and maintenance of the non-jurisdictional project components comply with **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**. With mitigation, operation and maintenance would directly or indirectly expose people or property to less than significant impacts associated with strong seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction?

Construction– Less Than Significant with Mitigation Incorporated

Based on the analysis below, impacts associated with seismic-related ground failure, including liquefaction, on project construction would be less than significant with the implementation of COCs **GEN-1** and **GEN-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1** and **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility and Generation-Intertie Line

Liquefaction is a phenomenon in which saturated, cohesionless soils, such as sand and silt, temporarily lose their strength and liquefy when subjected to dynamic forces, such as intense and prolonged ground shaking. To be susceptible to liquefaction, potentially liquefiable soils must be saturated or nearly saturated. In general, liquefaction hazards are most severe in saturated soils within the upper 50 feet of the ground surface. The potential for liquefaction increases in shallow groundwater conditions. The potential hazards associated with liquefaction are ground deformation and lateral spreading. (RCI 2023m)

According to the CGS Seismic Hazards Program: Liquefaction Zones online mapping application, the project is not in a liquefaction zone (CDOC 2022). However, the jurisdictional project components would be in areas underlain with soils that may be susceptible to liquefaction. (RCI 2023m)

During geotechnical investigations of the jurisdictional sites, depth to groundwater was reported at 14 to 30 feet below ground surface (bgs). Historical groundwater elevations were as shallow as 4 feet bgs. (RCI 2024e)

Liquefaction analyses for the project site was performed in general accordance with the CGS Special Publication 117 and 117A (CDOC 2008). The analysis was based on the soil data from the soil borings within the step-up substation area, a site-modified PGA of 0.6 g, and a mean magnitude of 6.3. The historical high groundwater depth of 4 feet below the ground surface was used. (RCI 2024e)

Calculation results indicate that on-site soils within the step-up substation site are susceptible to liquefaction at approximate depths of 7½ to 12 and 35 to 39 feet below the ground surface. Seismically induced settlement of saturated and unsaturated sands was estimated to be on the order of 1.6 inches. Differential seismic settlement is anticipated to be on the order of 1-inch. (RCI 2024e)

Prior to the issuance of a building permit for the final design of the jurisdictional project components, COCs **GEO-1** and **GEO-2** require the project owner to complete and submit preliminary soil and geotechnical reports to the CEC for review and approval. These reports shall include recommendations for mitigation, to the extent feasible, the seismic-related ground failure hazard. These recommendations shall be incorporated into the design of the jurisdictional components.

Design and construction of the jurisdictional project components would be required to comply with COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1** to address seismic related ground failure concerns. With mitigation, construction of the jurisdictional project components would expose people or property to less than significant direct or indirect impacts associated with the effects of seismic related ground failure.

PG&E Utility Switchyard and Downstream Network Upgrades

Groundwater was not encountered at the PG&E Switchyard. At the PG&E Switchyard, historical groundwater levels were reported deeper than 100 feet bgs. The potential for liquefaction, and liquefaction related hazards, such as lateral spreading, is considered low. Groundwater was not evaluated at the PG&E Downstream Network Upgrades. (RCI 2024h)

Based on the evaluation provided in this section and the section above, it is recommended the non-jurisdictional project components are designed and constructed in compliance with **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**, to address the effects of seismic related ground failure.

Operation— Less Than Significant Impact

Based on the analysis below, impacts associated with seismic-related ground failure, including liquefaction, on project operation would be less than significant with the

implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1** and **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility and Generation-Intertie Line

During the operation and maintenance of the proposed project, the facility could be subject to seismic related ground failure. For the jurisdictional project components, continued compliance with **COCs GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, would not expose people or property, directly or indirectly, to significant impacts associated with the effects of seismic related ground failure. With mitigation, risks to people or structures from seismic related ground failure during operation and maintenance of the jurisdictional project components would continue to be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation provided in the section above, it is recommended that operation and maintenance of the non-jurisdictional project components include continued compliance with **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Continued compliance would not expose people or property, directly or indirectly, to significant impacts associated with the effects of seismic related ground failure. With mitigation, risks to people or structures from seismic related ground failure would continue to be less than significant.

iv. Landslides?

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, impacts associated with landslides on project construction and operation would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

A landslide is a mass of rock, soil, or debris that has been displaced downslope by sliding, flowing, or falling. No records of major historical landslides were found in proximity to the project site and the project site is not mapped within a deep-seated landslide susceptibility zone (CDOC 2011). The landslide risk of the jurisdictional project components would be less than significant due to the nearly flat topography at the sites and surrounding areas. (RCI 2023m)

Construction, operation, and maintenance of the jurisdictional project components would not change the general surface morphology of the site. The potential for direct impact from mass wasting at the site during construction, operation, and maintenance would be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in this section and the section above, the landslide risk of the non-jurisdictional project components would be less than significant. The topography of the non-jurisdictional sites is nearly flat. The non-jurisdictional components are located near the foothills of the Diablo Range. The foothills do not feature steep slopes near the non-jurisdictional project sites, but the slopes have not been evaluated by the CGS for landslides. (CDOC 2011; RCI 2023m)

Construction, operation, and maintenance of the non-jurisdictional project components would not change the general surface morphology of the site. The potential for direct impact from mass wasting at the site during construction, operation, and maintenance would be less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Construction and Operation— Less Than Significant with Mitigation Incorporated

Based on the analysis below, impacts associated with substantial soil erosion or topsoil loss on project construction and operation would be less than significant with implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, and **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Project construction can increase the potential for water and wind to erode soil. The impact of construction on soil resources depends on soil erodibility, construction methods, and schedule. (RCI 2023n)

Prior to the issuance of a building permit for the final design of the jurisdictional project components, COCs **GEO-1** and **GEO-2** require the project owner to complete and submit preliminary soil and geotechnical reports to the CEC for review and approval. These reports shall include recommendations to mitigate, to the extent feasible, substantial soil erosion and the loss of topsoil. These recommendations shall be incorporated into the design of the jurisdictional components.

Compliance with the COCs **GEO-1** and **GEO-2**, **GEN-1**, and **CIVIL-1** would mitigate impacts of construction, operations, and maintenance activities on soil erosion and loss of topsoil to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the section above, for the non-jurisdictional project components, recommended compliance with **MMs GEO-1** to **GEO-3**, **GEN-1**, and

CIVIL-1, would mitigate impacts of construction, operations, and maintenance activities on soil erosion and loss of topsoil to less than significant.

c. Would the project be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, the impacts associated with unstable geological units on project construction would be less than significant with the implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, and **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The jurisdictional project components would be constructed in areas that have experienced land subsidence in the past (SWRCB 2023). As discussed in project application **Section 5.13, Water Resources**, Westlands Water District (WWD) Groundwater Sustainability Agency (GSA) and Fresno County are currently implementing a subsidence monitoring network throughout the San Joaquin Valley – Westside subbasin, in cooperation with other agencies including the USGS, California Department of Water Resources, and United States Bureau of Reclamation. The monitoring network provides robust spatial coverage of subsidence conditions using enhanced monitoring in key locations along the San Luis Canal, a segment of the California Aqueduct, where rates of subsidence impact the freeboard and conveyance capacity in the San Luis Canal (WWD GSA 2022). Depending on the monitoring agency, subsidence rate measurements are taken through the existing subsidence monitoring network are taken continuously, bi-annually, or annually. Any groundwater use for the project would be within the limits of allocations authorized by WWD's rules and regulations, and use of local groundwater for the project would be subject to the review and approval of WWD.

The WWD GSA is responsible for implementation of the Westside Subbasin Groundwater Sustainability Plan, including continued implementation of the subsidence monitoring network.

Construction of the jurisdictional components is not anticipated to cause or exacerbate existing subsidence issues, and any changes to existing subsidence conditions during implementation of the project would be detected by the subsidence monitoring network. If necessary, the GSAs may use data from the subsidence monitoring network to adjust management of the Westside Subbasin to avoid the exacerbation of existing subsidence issues, and to support regional recovery from subsidence.

Prior to the issuance of a building permit for the final design of the jurisdictional project components, COCs **GEO-1** and **GEO-2** require the project owner to complete and submit preliminary soil and geotechnical reports to the CEC for review and approval. These reports shall include recommendations for procedures to mitigate unstable geologic units and geologic units that could become unstable. These recommendations shall be incorporated into the final design of the jurisdictional components.

With compliance with COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, the jurisdictional project components would not be constructed on geologic units or soils that are unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. With mitigation, construction of the jurisdictional project components would result in less than significant impacts from soils that are unstable or could become unstable because of the project.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E Switchyard, a non-jurisdictional Project component, is an area that has not been specifically evaluated for ground subsidence. A review of vertical displacement contours indicates the area has a similar subsidence potential compared to the jurisdictional project components. The PG&E Downstream Upgrades, a non-jurisdictional component, were not evaluated for ground subsidence. (RCI 2023m)

Based on the evaluation in the section above, recommended compliance with **MMs GEO-1** and **GEO-3**, **GEN-1**, and **CIVIL-1** would ensure that non-jurisdictional project components are not constructed on geologic units or soils that are unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Based on the evaluation in this section and the section above, the potential impacts from unstable geologic units and soils on, and resulting from, non-jurisdictional project component construction would be less than significant.

Operation— Less Than Significant with Mitigation Incorporated

Based on the analysis below, the impacts associated with unstable geological units on project operation would be less than significant with the implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1** and **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation and maintenance of jurisdictional project components would not change the surface runoff or geotechnical characteristics of the material beneath the project facilities. Thus, operation and maintenance activities would not introduce new soil stability hazards. Occasional minor surface disturbance may continue to be required during maintenance activities, but such disturbance would be temporary and likely

small. Project operation and maintenance would not expose people or property, directly or indirectly, to unstable geologic or soil units (RCI 2023m; RCI 2023n).

Continued compliance with COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, would result in less than significant impacts from soils that are unstable or could become unstable because of the project during operation and maintenance.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in this section and the section above, recommended continued compliance with **MMs GEO-1**, **GEO-2**, **GEN-1**, and **CIVIL-1** would result in less than significant impacts from soils that are unstable or could become unstable because of the project during operation and maintenance.

Based on the evaluation in this section and the section above, the potential impacts from unstable geologic units and soils on, and resulting from, non-jurisdictional project component operation and maintenance would be less than significant.

d. Would the project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property?

Construction and Operation– Less Than Significant with Mitigation Incorporated

Based on the analysis below, the impacts associated with expansive soils on project construction and operation would be less than significant with the implementation of COCs **GEO-1** and **GEO-2**, **GEN-1**, and **CIVIL-1**, and **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Expansive soils swell with wetting and shrink with drying. Potential causes of moisture fluctuations include drying during construction, and subsequent wetting from rain, capillary rise, landscape irrigation, and type of plant selection. If untreated, expansive soils could damage future buildings and pavements on the project site. Expansive soils, if present, can be readily mitigated by either soil amendments or by removal and replacement with non-expansive soils, among other methods. (RCI 2023m)

Subsurface soils encountered at the project site during the geotechnical investigations logged the presence of soft to hard Fat and Lean Clay with varying amounts of interbedded layers of sand. Based on laboratory testing performed on these soils, expansive soil, as defined in Section 1803.5.3 of the CBC (CBC 2022), are present at the jurisdictional and non-jurisdictional project components.

Prior to the issuance of a building permit for the final design of the jurisdictional project components, COCs **GEO-1** and **GEO-2** require the project owner to complete and

submit preliminary soil and geotechnical reports to the CEC for review and approval. These reports shall include recommendations for mitigation, to the extent feasible, hazards from expansive soils. These recommendations shall be incorporated into the design of the jurisdictional components.

Compliance with COCs **GEO-1** and **GEO-2**, **GEN-1**, and **CIVIL-1** would mitigate potential impacts from expansive soils on construction, operations, and maintenance of the jurisdictional project components to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the section above, recommended continued compliance with **MMs GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**, would mitigate potential impacts from expansive soils on construction, operation, and maintenance of non-jurisdictional project components to less than significant.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Construction and Operation– *Less Than Significant Impact*

Based on the analysis below, the impacts associated with wastewater disposal on soils would have a less than significant impact on project construction and operation.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During project construction, wastewater production would be limited to temporary toilet and sanitary facilities, which would be serviced by a third-party contractor; no wastewater would be discharged within or to the project site. During project operation, wastewater production would be associated with permanent toilet and sanitary facilities. The sanitary facilities would either consist of portable sinks and toilets that would be regularly emptied by a permitted provider, or permanent facilities with an Onsite Wastewater Treatment System (OWTS), subject to oversight and approval by the County of Fresno Public Works and Planning Department. (RCI 2023oo)

With incorporation of an approved OWTS or portable sinks and toilets that would be regularly emptied by a permitted provider, the potential impacts related to wastewater disposal during construction and operation of the jurisdictional project components would be considered less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the section above, the potential impacts related to wastewater disposal during construction and operation of the non-jurisdictional project components would be considered less than significant.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, compliance with COCs **PAL-1** to **PAL-8** and **MMs PAL-1** to **PAL-8** would mitigate impacts of project construction and operation on unique paleontological or geologic features to less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

There are no known paleontological resources within the project site (RCI 2023s). For this project, a paleontological resources records review was conducted by the project owner's paleontological consultant using the online database maintained by the University of California Museum of Paleontology at Berkeley (UCMP 2023) and the Paleobiology Database (PBDB 2023). The records review identified no fossil localities inside or within a one-mile radius of the project site. (RCI 2023s)

The UCMP database was queried for fossil site records within the potentially impacted formations. UCMP invertebrate locality 3074 was labeled as "reef beds north of Cantua Creek." Cantua Creek extends through the project site, thus it is possible that this locality could occur near the project site. However, the fossils recovered from this locality represent the marine echinoid (sea urchin) *Scutella merriami*. Per Holroyd (Holroyd 2023), the presence of sea urchins makes it unlikely that locality 3074 originated from any of the geologic units underlying the project site and that the sea urchin more likely originated west of Interstate 5 in the Temblor or Santa Margarita formations (Holroyd 2023).

Based on a review of historical and modern aerial imagery, the project site contains no bedrock exposures and has been extensively disturbed with grading and agricultural activities. Therefore, a paleontological resources field survey was not conducted. (RCI 2023s)

Geological features are the result of geological processes, or actions that occur above and below the Earth's surface. Geological features that are unusual or out of the ordinary would be considered unique. However, there are no unique geologic features mapped or identified within the site footprint. (RCI 2023s)

Table 5.6-5 presents the paleontological potential of the geologic units that may be impacted during ground-disturbing activities for the project. The project site is directly underlain by three geologic units: Quaternary basin deposits, Quaternary fan deposits, and Quaternary older alluvium. Two additional units, the Tulare and Oro Loma formations, are not found at the surface directly beneath any project components but may be impacted by subsurface excavations. Of these geologic units, Quaternary older alluvium, Tulare Formation, and Oro Loma Formation have high paleontological

sensitivity. Quaternary basin deposits and Quaternary fan deposits have low sensitivity at depths from 0 to 5 feet. Based on the depth of the reliably dated Corcoran Clay Member and Friant Pumice Member of the Tulare Formation in this region, these Quaternary deposits have high paleontological sensitivity below 5 feet because it is estimated, that at this depth, the sediments are old enough (i.e., 5,000 years old) to preserve paleontological resources. (Dalrymple 1980; Miller et al. 1971; SVP 2010)

TABLE 5.6-5 PALEONTOLOGICAL POTENTIAL OF GEOLOGIC UNITS

Geologic Unit	Geologic Map Abbreviation	Paleontological Potential
Quaternary basin deposits	Qb	Low from 0 to 5 feet High below 5 feet
Quaternary fan deposits	Qf	Low from 0 to 5 feet High below 5 feet
Quaternary older alluvium	Qoa	High
Tulare Formation	QTt - Not mapped at the surface within the study area but potentially present at unknown depth beneath overlying deposits and formations.	High
Oro Loma Formation	Tol - Not mapped at the surface within the study area but potentially present at unknown depth beneath overlying deposits and formations.	High

Source: RCI 2023v

There is less than significant potential to disturb paleontological resources during operations because no earth-moving activities are required for operations and maintenance. Operation and maintenance activities may require occasional minor surface disturbance, but such disturbance would be temporary, small, and most likely limited to the disturbance of fill.

For the jurisdictional project components, staff propose COCs **PAL-1** to **PAL-8** to address the potential for the discovery of paleontological resources during excavation in native materials. During construction, operation, and maintenance of jurisdictional project components, compliance with COCs **PAL-1** to **PAL-8** would mitigate impacts to paleontological resources to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the section above, during construction, operation, and maintenance of the non-jurisdictional project components, staff recommend compliance with **MMs PAL-1** to **PAL-8** to mitigate the potential impacts on paleontological resources to less than significant.

g. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Construction and Operation– *Less Than Significant Impact*

Based on the analysis below, the impacts of project construction and operation on the availability of a known mineral resource of value would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Several issues influence the extraction of mineral resources in Fresno County, including the location of geologic deposition, the potential for impacts to the environment, commercial value, and land use conflicts. As a result, the extraction of mineral resources is limited to a relatively small number of sites throughout the County. In addition, at the project site, the geologic units at the surface and in the subsurface are widespread alluvial deposits that occur throughout the San Joaquin Valley. These geologic units are not unique in terms of commercial, scientific, and recreational value. The potential for rare and unique commercial, scientific, or recreational mineral resources is very low. (RCI 2023m)

Construction, operation, and maintenance of the jurisdictional project components would have less than significant impacts with regards to the availability of a known mineral resource that would be of commercial, scientific, or recreational value to the region and the residents of the state.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the section above, construction, operation, and maintenance of the non-jurisdictional project components would have less than significant impacts with regards to the availability of a known mineral resource that would be of commercial, scientific, or recreational value to the region and the residents of the state.

h. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Construction and Operation– *Less Than Significant Impact*

Based on the analysis below, project construction and operation would have a less than significant impact on the availability of a locally important mineral resource recovery site.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The project components are not on sites that are mapped or delineated on a local general plan, specific plan, or other land use plan as a locally important mineral resource recovery site. The geologic units at the ground surface and in the subsurface of the project area are widespread alluvial deposits that occur throughout the San Joaquin Valley. These units are not unique in terms of commercial value. (RCI 2023m)

The potential for recreational or scientific deposits (for example, rare minerals) is also not unique to the project site, given the geologic environment in the area. (RCI 2023m)

Construction, operation, and maintenance of the jurisdictional project components would have less than significant impacts on the availability of a locally important mineral resource recovery site.

PG&E Utility Switchyard and Downstream Network Upgrades

Based on the evaluation in the section above, construction, operation, and maintenance of the non-jurisdictional project components would have less than significant impacts on the availability of a locally important mineral resource recovery site.

5.6.2.3 Cumulative Impacts

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, geologic hazards would have a less than significant impact on project construction and operation with implementation of conditions of certification (COCs) **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**, and mitigation measures (MMs) **GEO-1** to **GEO-3**, **GEN-1**, and **CIVIL-1**. For details about COCs **GEN-1**, **CIVIL-1**, and **STRUC-1**, refer to **Section 4.1, Facility Design**. With implementation of these COCs and MMs, project construction and operation would have a less than significant impact on geologic hazards.

Project construction and operation would have a less than significant impact on geologic, mineral, and paleontological resources, with implementation of COCs **PAL-1** to **PAL-8** and MMs **PAL-1** to **PAL-8**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Geologic Hazards

The proposed project site would be constructed, operated, and maintained in a seismically active geologic environment. The ground shaking potential at jurisdictional project components must be mitigated through foundation and structural design as required by CBC 2022, or the most current version superseding that code, and Fresno County COO Title 15 and 17, and compliance with COCs **GEO-1** and **GEO-2**, **GEN-1**, **CIVIL-1**, and **STRUC-1**.

The potential for seismic induced ground failure, including liquefaction, unstable soils, expansive soils, soil erosion, would be addressed and mitigated through appropriate facility design. Soils that may be subject to settlement due to liquefaction, would be addressed and mitigated in accordance with a design-level geotechnical investigation as required by CBC 2022, Fresno County COO Title 15, and COC **GEO-2**.

Geological hazards are generally site-specific and depend on localized geologic and soil conditions. Construction and operation of the project would result in less than significant impacts related to ground rupture, seismic shaking, mass wasting and slope stability, liquefaction, subsidence, tsunami runup, expansion or collapse of soil structures, and geological resources. The project owner would comply with applicable LORS and permits pertaining to structural design and geotechnical analysis. As is required for the project, cumulative projects in the area would be required to comply with applicable regulations related to geological hazards and resources (RCI 2023m). Adherence to all federal, state, and local LORS pertaining to building safety and construction would limit cumulative impacts related to geologic hazards and resources to a less than significant level.

The project would not cause an exposure of people or property to geological hazards. There are no minor impacts that could combine cumulatively with those of other projects. The project would not result in a cumulatively considerable impact.

Geologic, Mineral, and Paleontological Resources

No unique surface or near surface geologic and mineralogic resources have been identified in the project area. Development of this project is not expected to lead to a significantly cumulative effect on geologic and mineralogic resources within the project area.

There is a potential for fossils to be encountered in excavations at the project site. If significant paleontological resources are uncovered during construction of jurisdictional project components, they would be protected and preserved in accordance with COCs **PAL-1** to **PAL-8**. These COCs would also mitigate any potential cumulative impacts.

The geographic scope of potential cumulative paleontological resource impacts is limited to the immediate vicinity of ground-disturbing activities that would occur during construction. As is required for the project, cumulative projects in the area would be required to undergo the appropriate level of project-specific environmental review and proponents would be expected to comply with local, state and federal LORS relating to paleontological resources (RCI 2023v). Adherence to all LORS pertaining to paleontological resources would limit cumulative impacts to a less than significant level. Moreover, with implementation of COCs **PAL-1** to **PAL-8**, the project's contribution to any cumulative impacts would not be cumulatively considerable.

PG&E Utility Switchyard and Downstream Network Upgrades

Geologic Hazards

Based on the evaluation provided in the section above, it is recommended that design, construction, operation, and maintenance of the non-jurisdictional project components comply with **MMs GEO-1 to GEO-3, GEN-1, CIVIL-1, and STRUC-1** through **STRUC-3** to mitigate potential cumulative impacts from geologic hazards to less than significant.

Geologic, Mineral, and Paleontological Resources

Based on the evaluation provided in the section above, it is recommended that design, construction, operation, and maintenance of the non-jurisdictional project components comply with **MMs PAL-1** to **PAL-8** to mitigate the potential cumulative impacts on geologic, mineral, and paleontological resources to less than significant.

5.6.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.6-6 lists staff's determination of conformance with applicable local, state, and federal LORS, including any proposed COCs to ensure that jurisdictional project components would comply with LORS. As shown in this table, staff concludes that with implementation of specific COCs, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "Staff Proposed Conditions of Certification", contains the full text of the referenced COCs.

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
Federal	
No federal regulations related to palaeontologic, geologic, or mineral resources apply to the Project facility design.	
California Building Code (2022)	
The California Building Code (CBC, 2022) includes a series of standards that are used in project investigation, design, and construction (including seismicity, grading and erosion control). The CBC has adopted provisions in the International Building Code and has been amended by Fresno County.	<p>Yes.</p> <p>Compliance with COCs GEO-1 and GEO-2, GEN-1, CIVIL-1, and STRUC-1 shall satisfy the standards and provisions for the jurisdictional project components</p>
Local	
Fresno County Code of Ordinances (2024b)	
Title 15 and Title 17. Identify building and construction requirements to reduce hazard potential that are applicable to all new construction, including the project.	<p>Yes.</p> <p>Compliance with COCs GEO-1 and GEO-2, GEN-1, CIVIL-1, and STRUC-1 shall satisfy the standards and provisions for the jurisdictional project components.</p> <p>The CBO and CPM will ensure the Project owner adheres to the standards within Title 15 and Title 17 and obtain all necessary permits prior to construction.</p>
Fresno County General Plan (2024a)	
Health and Safety Element: Section D. Seismic and Geologic Hazards	
Goal: To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.	<p>Yes.</p> <p>Compliance with COCs GEO-1 and GEO-2, GEN-1, CIVIL-1, and STRUC-1 shall satisfy the standards and provisions in this element.</p>
Policy HS-D.1 Geologic Investigations and Knowledge: The County shall continue to support scientific geologic investigations that refine,	

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe ground shaking, avalanche potential, and other hazardous geologic conditions in Fresno County.	The jurisdictional project components, as proposed, complies with the goal and policies of this element.
Policy HS-D.2 Geologic Hazard Mitigation Planning: The County shall ensure that the General Plan and/or County Ordinance Code is revised, as necessary, to incorporate geologic hazard areas formally designated by the State Geologist (e.g., Earthquake Fault Zones and Seismic Hazard Zones). Development in such areas, including public infrastructure projects, shall not be allowed until compliance with the investigation and mitigation requirements established by the State Geologist can be demonstrated.	
Policy HS-D.3 Soils and Geologic-Seismic Analysis: The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, ground shaking, lateral spreading, lurch-cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).	
Policy HS-D.4 Soils and Geologic-seismic Structure Design: The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the Uniform Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.	
Policy HS-D.5 Alquist-Priolo Earthquake Fault Act: Pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Chapter 7.5), the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied	
Policy HS-D.6 Seismic Standards for Critical Facilities: The County shall ensure compliance with State seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and	

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
storage facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.	
Policy HS-D.7 Soils Report: The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high "expansive" or "shrink-swell" properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.	
Policy HS-D.8 Minimize Soil Erosion: The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.	
Policy HS-D.9 Drainage Plans: The County shall require the preparation of drainage plans for development or public infrastructure projects in hillside areas to direct runoff and drainage away from unstable slopes.	
Policy HS-D.10 Maximum Slope Requirements: The County shall not approve a County permit for new development, including public infrastructure projects where slopes are over thirty (30) percent unless it can be demonstrated by a California-registered civil engineer or engineering geologist that hazards to public safety will be reduced to acceptable levels.	
Policy HS-D.11 Landslide Hazard Areas: In known or potential landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems, undercutting the bases of slopes, removal of vegetative cover, and steepening of slopes.	
Policy HS-D.12 Avalanche Hazard Areas: The County shall not approve a County permit for new development, including public infrastructure projects, in known or potential avalanche hazard areas unless it can be demonstrated by a California-registered engineer or engineering geologist that the structures will be safe under anticipated snow loads and avalanche conditions.	

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
<p>Policy HS-D.13 Geologic Hazard Areas Designations: Whenever zoning is employed to restrict the use of land subject to severe geologic hazards (e.g., landslides), the County shall designate parcels so restricted for open space uses.</p> <p>Implementation Program HS-D.A: The County shall regularly review readily available information published by the California Division of Mines and Geology and other agencies and use the information to update County maps and the General Plan Background Report. Implements policies: HS-D.1 and HS-D.2 Responsible Department(s): Department of Public Works and Planning Time Frame: Ongoing</p> <p>Implementation Program HS-D.B: The County shall create and adopt a Geologic Hazards Checklist to be utilized during the development review process. Implements policies: HS-D.3, HS-D.4, HS-D.5, HS-D.6, HS-D.7, HS-D.8, HS-D.9, HS-D.10, HS-D.11, and HS-D.12 Responsible Department(s): Department of Public Works and Planning Time Frame: 2025-2030</p>	
<p>Open Space and Conservation Element: Section C. Mineral Resources</p>	
<p>Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.</p> <p>Policy OS-C.1 Incompatible Mining Use: The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.</p> <p>Policy OS-C.2 Mineral Resource Zones: The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2). (See Figures 7-9, 7-10, and 7-11 in Fresno County General Plan Background Report.)</p> <p>Policy OS-C.3 Surface Mine Operations: The County shall require that the operation and reclamation of surface mines be consistent with SMARA and special zoning ordinance provisions.</p> <p>Policy OS-C.4 Mining Impacts: The County shall impose conditions as necessary to minimize or</p>	<p>Yes.</p> <p>The CBO and CPM will ensure the project owner adheres to the standards within this Open Space and Conservation Element and obtain all necessary permits prior to construction.</p> <p>The jurisdictional project components, as proposed, complies with the goal and policies of this element.</p>

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
eliminate the potential adverse impact of mining operations on surrounding properties.	
Policy OS-C.5 Surface Mine Reclamation: The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.	
Policy OS-C.6 Williamson Act on Mineral Deposits: The County shall accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.	
Policy OS-C.7 Mining Buffers: The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.	
Policy OS-C.8 Aggregate Mine Buffers: The County shall, where feasible along the San Joaquin River, site recreational trails, bikeways, and other recreation areas at least three hundred (300) feet from the edge of active aggregate mining operations and separate them by physical barriers. Recreational trail/bikeway crossings of active haul routes should be avoided whenever possible; if crossings of haul routes are necessary, separate where feasible.	
Policy OS-C.9 Mineral Resource Zone Compliance: The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of SMARA.	
Policy OS-C.10 Mineral Resource Lands Protection: The County shall not permit land uses that threaten the future availability of mineral resource or preclude future extraction of those resources.	
Policy OS-C.11 Watershed-Based Aggregate Mine Plan: As part of a future Kings River Regional Plan update the County shall undertake a watershed-based planning effort to assess future extraction of the aggregate resources and recreation uses along the Kings River as a part of an update of the Kings River Regional Plan. Such a planning effort would help to facilitate use of the resource while protecting other Kings River watershed resources and functions, including floodplain areas. (See	

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Policy OS-H.10, Policy LU-C.4, and Program LU-C.A)	
Policy OS-C.12 New Development Compatibility: The County shall ensure that new discretionary land use developments are compatible with existing and potential surface mining areas and operations as identified on the Mineral Resource Zone Maps prepared by the State Division of Mines and Geology and other mineral resource areas identified by the County.	
Open Space and Conservation Element: Section J. Historical, Cultural, and Geological Resources	
Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the county's valued assets that have contributed to past county events, trends, styles of architecture, and economy.	Yes. COCs PAL-1 to PAL-8 were developed based upon the guidance provided in the SVP standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. COCs PAL-1 to PAL-8 require identification of a qualified Paleontological Resource Specialist (PRS), identification of qualified PRM, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.
Policy OS-J.8 Landmark Designations: The County shall support the registration by property owners and others of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historical Landmarks, Points of Historical Interest, or Local Landmark).	
Policy OS-J.9 Historical Site Markers: The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.	Compliance with these eight conditions would ensure compliance with this Open Space and Conservation Element for the jurisdictional project components.
Policy OS-J.12 Geologic Resource Preservation: In approving new development, the County shall ensure, to the maximum extent practicable, that the location, siting, and design of any project be subordinate to significant geologic resources.	
Policy OS-J.13 Open Space Easements: The County shall encourage property owners to enter into open space easements for the protection of unique geologic resources.	
Policy OS-J.14 Geologic Resource Parks: The County shall consider purchasing park sites for the purpose of preserving unique geologic resources for public enjoyment.	

TABLE 5.6-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Policy OS-J.15 Natural Landmarks: The County should encourage the inclusion of unique geologic resources on the National Registry of Natural Landmarks.	
Policy OS-J.16 Permanent Geologic Resource Protection: The County shall encourage State and Federal agencies to purchase significant geologic resources for permanent protection.	
Implementation Program OS-J.A: The County shall prepare and maintain, using a GIS database, an inventory of historical sites, buildings, and landmarks.	
Standards	
Society for Vertebrate Paleontology (2010)	
The "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources" is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources developed by the SVP, a national organization of professional scientists. The measures were adopted in October 1995, and revised in 2010 following adoption of the Paleontological Resources Preservation Act (PRPA) of 2009. The SVP impact mitigation guidelines establish criteria for identifying and assessing significant paleontological resources. Additionally, these guidelines include standards and procedures to be employed prior to site disturbance, monitoring during disturbance, and preservation/mitigation of identified resources.	<p>Yes.</p> <p>COCs PAL-1 to PAL-8 were developed based upon the guidance provided in the SVP standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. COCs PAL-1 to PAL-8 require identification of a qualified PRS, identification of qualified PRMs, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified. Compliance with these eight conditions would ensure compliance with this standard for the jurisdictional project components.</p>

5.6.4 Conclusions and Recommendations

Staff recommends adopting the COCs as detailed in subsection "5.6.5 Proposed Conditions of Certification" below. As discussed above, with implementation of the staff proposed COCs, impacts from the jurisdictional project components related to geology, paleontology, and minerals, would be less than significant. The jurisdictional project components would conform with applicable LORS. The COCs below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Impacts associated with the PG&E Utility Switchyard and Downstream Network Upgrades to be considered for permitting by the California Public Utilities Commission (CPUC) would be further reduced with the inclusion of MMs.

5.6.5 Proposed Conditions of Certification

The following conditions of certification (COC) are proposed for Geology, Minerals, and Paleontology for the jurisdictional project components. For detailed descriptions of COCs **GEN-1**, **CIVIL-1**, and **STRUC-1**, refer to **Section 4.1, Facility Design**.

GEO-1 As described in the CBC (2022) Section 1803.1 and Fresno County Code of Ordinances Title 17 (2024), or their successors, the project owner shall complete a preliminary soil report. The report shall specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity, liquefaction, dynamic compaction, compressible soils, corrosive soils, and ground rupture due to faulting. The report must also include recommendations for ground improvement and foundation systems necessary to mitigate these potential geologic hazards, if present.

As described CBC (2022) Sections 1803.2 to 1803.5, the project owner shall complete geotechnical investigations if investigative conditions exist for questionable soils, expansive soils, shallow groundwater, deep foundations, rock strata, excavations near foundations, compacted fill material, controlled low-strength material, alternate setback and clearance, and Seismic Design Categories C through F.

In accordance with the California Business and Professions Code and CBC (2022) Section 1803.1, the preliminary soils report and other geotechnical investigations must be prepared under the responsible charge of, and signed by, appropriate qualified California licensed individuals.

As described in Section 1803.7 of the California Building Code (CBC 2022), or its successor in effect at the time construction of the project commences, the project owner shall complete a geohazards report. The geohazard report shall identify geologic and seismic conditions that may require mitigation. An appropriate qualified California-certified licensed engineering geologist, in consultation with a California registered geotechnical engineer, shall prepare, sign, and seal the geohazards report.

Verification: As described in the CBC (2022) and Section 1803.1 and Section 1803.6, the project owner shall submit a written report of the preliminary soil report and geotechnical and geohazard investigations to the CEC's delegate chief building official (DCBO). The project owner shall provide to the compliance project manager (CPM) copies of the soils engineering report, application for grading permit, and any comments by the DCBO at least 60 days prior to grading.

GEO-2 As described in the CBC (2022) Sections 1803.2 to 1803.5, the project owner shall complete geotechnical investigations if investigative conditions exist for questionable soils, expansive soils, shallow groundwater, deep foundations, rock strata, excavations near foundations, compacted fill material, controlled low-

strength material, alternate setback and clearance, and Seismic Design Categories C through F.

In accordance with the California Business and Professions Code and CBC (2022) Section 1803.1, the geotechnical investigations must be prepared under the responsible charge of, and signed by, appropriate qualified California licensed individuals.

As described in Section 1803.7 of the California Building Code (CBC 2022), or its successor in effect at the time construction of the project commences, the project owner shall complete a geohazards report. The geohazard report shall identify geologic and seismic conditions that may require mitigation. An appropriate qualified California-certified licensed engineering geologist, in consultation with a California registered geotechnical engineer shall prepare, the geohazards portion of the geotechnical report.

Verification: As described in the CBC (2022) Section 1803.6, the project owner shall submit a written geotechnical report to the DCBO. The project owner shall provide to the CPM copies of the geotechnical investigations and geohazards report, building permit, and any comments by the DCBO at least 60 days prior to grading.

PAL-1 The project owner shall provide the CPM with the resume, qualifications, and contact information of its PRS for review and approval. The PRS's resume shall demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks. The PRS's resume shall also include the names and phone numbers of references that can be contacted to verify information.

As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources by SVP (SVP 2010). The qualifications of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree (M.S., Ph.D., or equivalent).
2. Ability to recognize and collect fossils in the field.
3. Local geological and biostratigraphic expertise.
4. Proficiency in identifying vertebrate and invertebrate fossils.
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified PRMs to monitor as he or she deems necessary on the project. PRMs shall have the equivalent of the following qualifications:

1. B.S. or B.A. degree in geology or paleontology and a minimum of one year of relevant paleontological resource monitoring experience in California; or
2. A.S. or A.A. in geology, paleontology, or biology and a minimum of four years of relevant paleontological resource monitoring experience in California; or
3. Enrollment in upper division classes pursuing a bachelor's degree or a more advanced degree in the field of geology or paleontology and a minimum of three years of relevant paleontological resource monitoring experience in California.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain Compliance Project Manager (CPM) approval for the replacement PRS. The project owner shall keep resumes on file for the qualified PRSs and PRMs.

The PRM's resume shall include the names and contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work to the CPM, whose approval must be obtained prior to initiation of ground disturbing activities.

At least 30 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated PRMs for the project. The letter shall state that the identified PRMs meet the minimum qualifications for paleontological resource monitoring as required by this condition of certification. If additional PRMs are needed during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM for approval no later than one week prior to the monitor's beginning on-site duties.

Prior to any change of the PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings must show the location,

depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet (1:480) and 1 inch = 100 feet (1:1,200). If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the Project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent and construction field manager to confirm area(s) to be worked the following week, until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

If there are planned changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the Project owner shall submit a letter to the CPM within five days of identifying the changes.

PAL-3 The project owner shall ensure that the PRS prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) and submits it to the CPM for review and approval. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, sampling, and reporting activities, and may be modified with CPM approval. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, the project's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the SVP (SVP 2010) and shall include, but not be limited to, the following:

1. Procedures for and assurance that those procedures would be followed in the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, field work, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation.

2. Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these COCs.
3. A thorough discussion of the geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.
4. An explanation of why sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place and in which geologic units. This should include descriptions of the sampling procedures that shall be used for fine-grained and coarse-grained units.
5. A discussion of the locations where monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.
6. A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and how notifications shall be performed.
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.
8. Procedures to inventory, prepare, and deliver fossil materials for curation in a retrievable storage collection at a public repository or museum that meet the SVP's standards and requirements for the curation of paleontological resources.
9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.
10. A copy of the paleontological resources COCs.
11. A copy of the daily monitoring log form.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance the project owner and the PRS shall prepare a CPM-approved Worker Environmental Awareness Program (WEAP).

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is

to train project workers to recognize palaeontologic resources and identify procedures they must follow to ensure there are no impacts to sensitive palaeontologic resources.

The WEAP shall include:

1. A discussion of applicable laws and penalties under the law.
2. Good quality photographs or physical examples of fossils expected to be found in units of high palaeontologic sensitivity at, or near, the project site.
3. Information that the PRS and PRM have the authority to stop or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource.
4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.
5. An informational brochure that identifies reporting procedures in the event of a discovery.
6. A WEAP certification of completion form signed by each worker indicating that they have received the training.
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit to the CPM for review and comment the draft WEAP, including the brochure and sticker. The submittal shall also include a draft training script and the set of reporting procedures for workers to follow.

At least 15 days prior to ground disturbance, the project owner shall submit to the CPM for approval the final WEAP and training script. If the project owner is planning to use a video for training, a copy of the training video shall be submitted following final approval of the WEAP and training script.

PAL-5 No worker shall excavate or perform any ground disturbance activity prior to receiving CPM-approved WEAP training by the PRS, unless specifically approved by the CPM.

Prior to project ground disturbance, the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or

tools. Following the start of ground disturbing activities and after the initial WEAP training conducted prior to ground disturbance, a CPM- approved video or in-person training may be used for new employees. If a video is used a qualified trainer shall be present to monitor training and respond to questions.

The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

Verification: In the Monthly Compliance Report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained, trainer identification, and type of training (in-person and/or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

The resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to providing WEAP training.

If the project owner requests an alternate paleontological WEAP trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct WEAP training prior to CPM authorization.

PAL-6 The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading and excavation in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. If the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence with the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to stop or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and be included in the MCR. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.

- The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities; copies of these logs shall be submitted with the MCR. The name and contact information of PRM(s) and PRS who were making field observations shall be included in the daily log. The PRS

may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

- The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources COCs. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the COCs.
- For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours. If the resources are encountered on a weekend or holiday, notification shall occur on the morning of the next business day. In the event construction has been stopped because of a paleontological find, such notification shall be provided as soon as practical, but not later than 24 hours after a stop work order has been issued.
- For excavations planned in material that is classified as having a moderate to high paleontological sensitivity prior to construction additional precautions may be required. Should excavation methods be proposed that would preclude effective monitoring and examination of paleontological resources encountered during excavation, appropriate mitigation involving education of the public about the lost resources shall be proposed in the PRMMP.
- The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities to be included in each MCR. The summary shall include the name(s) of the PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils.
- Negative findings, when no fossils are identified, shall also be reported. A final section of the report shall address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: A copy of the daily monitoring log of paleontological resource activities shall be included in the MCR.

The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 15 days in advance of any proposed changes in monitoring different from that identified in the PRMMP, which require concurrence between the PRS

and CPM. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-7 The project owner shall ensure preparation of a PRR by the designated PRS. The PRR shall be prepared following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and shall be submitted to the CPM for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered and the PRS's description of sensitivity and significance of those resources, and notes regarding if and how the fossil material was curated in accordance with **PAL-3**.

Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.

PAL-8 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of fossils for curation, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees charged by the museum for fossil material collected and curated as a result of paleontological mitigation. The project owner shall also provide the curator with documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the fossil material.

Verification: Within 60 days after the submittal of the PRR, the project owner shall submit documentation to the CPM identifying the entity that would be responsible for curating collected specimens. This documentation shall also show that fees have been paid for curation and the owner relinquishes control and ownership of all fossil material.

5.6.6 Recommended Mitigation Measures

The following mitigation measures are recommended for construction, operations, and maintenance of non-jurisdictional project components.

MM CIVIL-1 Under the responsible charge of an appropriate registered California professional, the project owner shall prepare and submit the following to the CPUC:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A construction storm water pollution prevention plan (SWPPP);
4. Soils, geotechnical, or foundation investigations reports required by the 2022 CBC; and
5. Design plans, calculations, and other supporting documentation to mitigate the risks of geologic and seismic hazards on people and project structures to less than significant.

MM GEO-1 As described in the CBC (2022) Section 1803.1 and Fresno County Code of Ordinances Title 17 (2024), or their successors, the project owner shall complete a preliminary soil report. The report shall specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity, liquefaction, dynamic compaction, compressible soils, corrosive soils, and ground rupture due to faulting. The report must also include recommendations for ground improvement and foundation systems necessary to mitigate these potential geologic hazards, if present.

As described CBC (2022) Sections 1803.2 to 1803.5, the project owner shall complete geotechnical investigations if investigative conditions exist for questionable soils, expansive soils, shallow groundwater, deep foundations, rock strata, excavations near foundations, compacted fill material, controlled low-strength material, alternate setback and clearance, and Seismic Design Categories C through F.

In accordance with the California Business and Professions Code and CBC (2022) Section 1803.1, the preliminary soils report and other geotechnical investigations must be prepared under the responsible charge of, and signed by, appropriate qualified California licensed individuals.

As described in Section 1803.7 of the California Building Code (CBC 2022), or its successor in effect at the time construction of the project commences, the project owner shall complete a geohazards report. The geohazard report shall identify geologic and seismic conditions that may require mitigation. An appropriate qualified California-certified licensed engineering geologist, in consultation with a California registered geotechnical engineer, shall prepare, sign, and seal the geohazards report.

MM GEO-2 As described in the CBC (2022) Sections 1803.2 to 1803.5, the project owner shall complete geotechnical investigations if investigative conditions exist for questionable soils, expansive soils, shallow groundwater, deep foundations,

rock strata, excavations near foundations, compacted fill material, controlled low-strength material, alternate setback and clearance, and Seismic Design Categories C through F.

In accordance with the California Business and Professions Code and CBC (2022) Section 1803.1, the geotechnical investigations must be prepared under the responsible charge of, and signed by, appropriate qualified California licensed individuals.

As described in Section 1803.7 of the California Building Code (CBC 2022), or its successor in effect at the time construction of the project commences, the project owner shall complete a geohazards report. The geohazard report shall identify geologic and seismic conditions that may require mitigation. An appropriate qualified California-certified licensed engineering geologist, in consultation with a California registered geotechnical engineer shall prepare, the geohazards portion of the geotechnical report.

MM GEO-3 Standard PG&E Construction Measures recommend the following actions to minimize and mitigate construction in soft or loose soils (RCI 2024cc). 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 (RCI 2024cc):

- 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. (RCI 2024cc)

MM GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2022 California Building Standards Code (CBSC 2022) which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other engineering LORS applicable to civil and structural aspects of the project in effect at the time initial design plans are submitted to the CPUC for review and approval. The CBSC in effect is the edition that has been adopted by the

California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving (onsite), demolition, repair, or maintenance of the completed facility.

MM PAL-1 The project owner shall provide the CPUC with the resume, qualifications, and contact information of its PRS for review and approval. The PRS's resume shall demonstrate to the satisfaction of the CPUC the appropriate education and experience to accomplish the required paleontological resource tasks. The PRS's resume shall also include the names and phone numbers of references that can be contacted to verify information.

As determined by the CPUC, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources by SVP (SVP 2010).

The qualifications of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree (M.S., Ph.D., or equivalent).
2. Ability to recognize and collect fossils in the field.
3. Local geological and biostratigraphic expertise.
4. Proficiency in identifying vertebrate and invertebrate fossils.
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors (PRMs) to monitor as he or she deems necessary on the project. PRMs shall have the equivalent of the following qualifications:

1. B.S. or B.A. degree in geology or paleontology and a minimum of one year of relevant paleontological resource monitoring experience in California; or
2. A.S. or A.A. in geology, paleontology, or biology and a minimum of four years of relevant paleontological resource monitoring experience in California; or
3. Enrollment in upper division classes pursuing a bachelor's degree or a more advanced degree in the field of geology or paleontology and a minimum of three years of relevant paleontological resource monitoring experience in California.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the PRR, the project owner shall obtain CPUC approval for the

replacement PRS. The project owner shall keep resumes on file for the qualified PRSs and PRMs.

The PRM's resume shall include the names and contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPUC for review and approval.

MM PAL-2 The project owner shall provide to the PRS and the CPUC, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPUC. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings must show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet (1:480) and 1 inch = 100 feet (1:1,200). If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPUC.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPUC. Before work commences on affected phases, the Project owner shall notify the PRS and CPUC of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent and construction field manager to confirm area(s) to be worked the following week, until ground disturbance is completed.

MM PAL-3 The project owner shall ensure that the PRS prepares a PRMMP and submits it to the CPUC for review and approval. Approval of the PRMMP by the CPUC shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, sampling, and reporting activities, and may be modified with CPUC approval. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, the project's on-site manager, and the CPUC.

The PRMMP shall be developed in accordance with the guidelines of the SVP (SVP 2010) and shall include, but not be limited to, the following:

1. Procedures for and assurance that those procedures would be followed in the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, field work, flagging or staking, construction monitoring, mapping and data recovery,

- fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation.
2. Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these COCs.
 3. A thorough discussion of the geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.
 4. An explanation of why sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place and in which geologic units. This should include descriptions of the sampling procedures that shall be used for fine-grained and coarse-grained units.
 5. A discussion of the locations where monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.
 6. A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and how notifications shall be performed.
 7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.
 8. Procedures to inventory, prepare, and deliver fossil materials for curation in a retrievable storage collection at a public repository or museum that meet the SVP's standards and requirements for the curation of paleontological resources.
 9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.
 10. A copy of the paleontological resources COCs.
 11. A copy of the daily monitoring log form.

MM PAL-4 Prior to ground disturbance the project owner and the PRS shall prepare a CPUC-approved WEAP.

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is to train project workers to recognize palaeontologic resources and identify procedures they must follow to ensure there are no impacts to sensitive palaeontologic resources.

The WEAP shall include:

1. A discussion of applicable laws and penalties under the law.
2. Good quality photographs or physical examples of fossils expected to be found in units of high palaeontologic sensitivity at, or near, the project site.
3. Information that the PRS and PRM have the authority to stop or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource.
4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.
5. An informational brochure that identifies reporting procedures in the event of a discovery.
6. A WEAP certification of completion form signed by each worker indicating that they have received the training.
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.

MM PAL-5 No worker shall excavate or perform any ground disturbance activity prior to receiving CPUC-approved WEAP training by the PRS, unless specifically approved by the CPUC.

Prior to project ground disturbance, the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or tools. Following the start of ground disturbing activities and after the initial WEAP training conducted prior to ground disturbance, a CPUC- approved video or in-person training may be used for new employees. If a video is used a qualified trainer shall be present to monitor training and respond to questions.

The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

MM PAL-6 The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading and excavation in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. If the

PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence with the CPUC.

The project owner shall ensure that the PRS and PRM(s) have the authority to stop or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

- Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPUC prior to the change in monitoring and be included in the MCR. The letter or email shall include the justification for the change in monitoring and be submitted to the CPUC for review and approval.
- The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities; copies of these logs shall be submitted with the MCR. The name and contact information of PRM(s) and PRS who were making field observations shall be included in the daily log. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPUC at any time.
- The project owner shall ensure that the PRS notifies the CPUC within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources COCs. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the COCs.
- For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPUC within 24 hours. If the resources are encountered on a weekend or holiday, notification shall occur on the morning of the next business day. In the event construction has been stopped because of a paleontological find, such notification shall be provided as soon as practical, but not later than 24 hours after a stop work order has been issued.
- For excavations planned in material that is classified as having a moderate to high paleontological sensitivity prior to construction additional precautions may be required. Should excavation methods be proposed that would preclude effective monitoring and examination of paleontological resources encountered during excavation, appropriate mitigation involving education of the public about the lost resources shall be proposed in the PRMMP.
- The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities to be included in each MCR. The summary shall include the name(s) of the PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits

encountered, descriptions of samplings within each unit, and a list of identified fossils.

- Negative findings, when no fossils are identified, shall also be reported. A final section of the report shall address any issues or concerns about the project relating to palaeontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPUC. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

MM PAL-7 The project owner shall ensure preparation of a PRR by the designated PRS. The PRR shall be prepared following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and shall be submitted to the CPUC for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered and the PRS's description of sensitivity and significance of those resources, and notes regarding if and how the fossil material was curated in accordance with **MM PAL-3**.

Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.

MM PAL-8 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of fossils for curation, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees charged by the museum for fossil material collected and curated as a result of paleontological mitigation. The project owner shall also provide the curator with documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the fossil material.

5.6.7 References

CBC 2022 – California Building Standards Commission. California Building Code (CBC), Title 24, Part 2 (Volumes 1 & 2) with July 2024 Supplement. California Code of Regulations. 2022. Accessed on October 22, 2024. Available online at: <https://codes.iccsafe.org/content/CABC2022P1/california-code-of-regulations-title-24>

- CDOC 1988 – California Department of Conservation (CDOC), State Mining and Geology Board, Division of Mines and Geology. Designation of Regionally Significant Construction Aggregate Resources in the Fresno Production-Consumption Region. 1988. SMARA Designation Report No. 8. July 1988. Accessed on October 21, 2024. Available online at: https://www.conservation.ca.gov/smgb/reports/Documents/Designation_Reports/SMARA%20Designation%20Report%20No.%208.pdf
- CDOC 2002 – California Department of Conservation (CDOC). California Geological Survey (CGS). Note 36, California Geomorphic Provinces. Accessed on March 20, 2024. Available online at: <https://www.conservation.ca.gov/cgs/documents/publications/cgs-notes/CGS-Note-36.pdf>
- CDOC 2008 – California Department of Conservation (CDOC). California Geological Survey (CGS). Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California. 2008. Accessed on October 23, 2024. Available online at: https://www.conservation.ca.gov/cgs/Documents/Publications/Special-Publications/SP_117a.pdf
- CDOC 2011 – California Department of Conservation (CDOC), California Geological Survey (CGS). CGS Map Sheet 58: Deep-Seated Landslide Susceptibility. 2011. Accessed on January 9, 2025. Available online at: <https://maps-cnra-cadoc.opendata.arcgis.com/maps/cadoc::cgs-map-sheet-58-deep-seated-landslide-susceptibility/about>
- CDOC 2015 – California Department of Conservation (CDOC), California Geological Survey (CGS). Fault Activity Map of California. 2015. Accessed on January 15, 2024. Available online at: <https://maps.conservation.ca.gov/cgs/fam>
- CDOC 2016 – California Department of Conservation (CDOC). Mines Online Interactive Web Map. 2016. Accessed on October 21, 2024. Available online at: <https://maps.conservation.ca.gov/mol/index.html>
- CDOC 2020 – California Department of Conservation (CDOC), California Geological Survey (CGS). California Mineral Production Reports and Data, California Non-Fuel Mineral Production. 2020. Accessed on March 14, 2024. Available online at: <https://www.conservation.ca.gov/cgs/documents/minerals/california-non-fuel-mineral-production-2020-a11y.pdf>
- CDOC 2022 – California Department of Conservation (CDOC). CGS Seismic Hazards Program: Liquefaction Zones. Updated: February 11, 2022. Accessed on January 9, 2025. Available online at: <https://maps-cnra-cadoc.opendata.arcgis.com/datasets/cadoc::cgs-seismic-hazards-program-liquefaction-zones-1/about>
- CDOC 2023a – California Department of Conservation (CDOC). AB 3098 List. List effective October 21, 2024. Accessed on October 21, 2024. Available online at: <https://www.conservation.ca.gov/smgb/Pages/AB-3098-List.aspx>
- CDOC 2023b – California Department of Conservation (CDOC). California Geologic Energy Management Division (CalGEM) Well Finder Interactive Map. 2023.

- Accessed on March 14, 2024. Available online at: <https://maps.conservation.ca.gov/doggr/wellfinder/>
- CDOC 2023c – California Department of Conservation (CDOC), California Geological Survey (CGS). Earthquake Zones of Required investigation. 2023. Accessed on: March 14, 2024. Available online at: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>
- CCR 2022 – California Residential Code (CRC), Title 24, Part 2.5 with July 2024 Supplement. 2022. Accessed on October 23, 2024. Available online at: <https://codes.iccsafe.org/content/CARC2022P3>
- Dalrymple 1980 – Dalrymple, G.B. K-Ar ages of the Friant Pumice Member of the Turlock Lake Formation, the Bishop Tuff, and the Tuff of Reds Meadow, Central California. *Isochron/West, Bulletin of Isotopic Geochronology*, Volume 28, pp. 3-5. 1980. Accessed by applicant. Not available online.
- Dibblee and Minch 2007 – Dibblee, T.W. and J.A. Minch. *Geologic Map of the Lillis Ranch Quadrangle, Fresno County, California*. Dibblee Geological Foundation, Dibblee Foundation Map DF-313, Scale 1:24,000. 2007. Accessed by applicant. Not available online.
- Fresno County 2024a – Fresno County 2024 General Plan Policy Document. February 2024. Accessed on January 15, 2025. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps>
- Fresno County 2024b – Ordinance Code of Fresno County, CA. Supp. No. 45. June 4, 2024. Accessed on October 22, 2024. Available online at: https://library.municode.com/ca/fresno_county/codes/code_of_ordinances
- Holroyd 2023 – Holroyd, P. Collections search of the University of California Museum of Paleontology for the Darden Solar Project (#22-12530). 2023. Accessed by applicant. Not available online.
- IBC 2021 – International Building Code (IBC). 2021. Available online at: <https://codes.iccsafe.org/content/IBC2021P2>
- Jefferson 2010 – Jefferson G. T. A catalogue of late Quaternary vertebrates from California. *Natural History Museum of Los Angeles County Technical Report*. Volume 7. pp. 5-172. 2010. Accessed by applicant. Not available online.
- Jennings and Strand 1958 – Jennings, C.W. and R.G. Strand. *Geologic Map of California: Santa Cruz Sheet*. California Division of Mines and Geology, *Geologic Atlas of California GAM-20*, scale 1:250,000. 1958. Accessed on March 14, 2024. Available online at: https://www.conservation.ca.gov/cgs/Documents/Publications/Geologic-Atlas-Maps/GAM_20-SantaCruz-1958-Explanation.pdf
- Miller et al. 1971 – Miller, R.E., J.H. Green, and G.H. Davis. *Geology of the Compacting Deposits in the Los Banos- Kettleman City Subsidence Area, California*. United

- States Geological Survey, Professional Paper 497-E, scale 1:250,000. 1971. Accessed on March 14, 2024. Available online at: <https://pubs.usgs.gov/publication/pp497E>
- PBDB 2023 – Paleobiology Database (PBDB). The Paleobiology Database. 2023. Accessed by Applicant. Available online at: <http://paleobiodb.org>
- RCI 2023m – Rincon Consultants, Inc. (TN 252934). Section 5-16 Geological Hazards and Resources. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023n – Rincon Consultants, Inc. (TN 252935). Section 5-14 Soils. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023s – Rincon Consultants, Inc. (TN 252967). Appendix T Paleontological Resources Assessment. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023v – Rincon Consultants, Inc. (TN 252973). Section 5-15 Paleontological Resources. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023oo – Rincon Consultants, Inc. (TN 253035). Section 5-13 Water Resources. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024e – Rincon Consultants, Inc. (TN 254674). Data Response Set 1 Appendix A – Geotechnical Report Vol 1 Part 1. Dated February 26, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024f – Rincon Consultants, Inc. (TN 254675). Data Response Set 1 Appendix A – Geotechnical Report Vol 1 Part 2. Dated February 26, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024h – Rincon Consultants, Inc. (TN 254677). Data Response Set 1 Appendix A – Geotechnical Report Utility Switchyard. Dated February 26, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024cc – Rincon Consultants, Inc. (TN 258574). Data Response Set 6 - Appendix D REV 1 DR TSD-1 BRA Vol 1. Dated August 20, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- SVP 2010 – Society of Vertebrate Paleontology (SVP). Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. 2010. Accessed on October 18, 2023. Available online at: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf
- SWRCB 2023 – California State Water Resources Control Board (SWRCB). Construction Stormwater Program. State of California. 2023. Accessed by Applicant. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html

- UCMP 2023 – University of California Museum of Paleontology (UCMP). UCMP database. 2023. Accessed on October 18, 2023. Available online at: <http://ucmpdb.berkeley.edu/>
- USGS 2011 – United States Geological Survey (USGS). Mineral Resources Online Spatial Data: Interactive Maps and Downloadable Data for Regional and Global Geology, Geochemistry, Geophysics, and Mineral Resources. 2011. Accessed on October 18, 2023. Available online at: <https://mrdata.usgs.gov/general/map-us.html>
- USGS 2017 – United States Geological Survey (USGS). Quaternary Fault and Fold Database of the United States – Nunez fault zone, Alcalde Hills Section (Class A) No. 289. 2017. Accessed on March 14, 2024. Available online at: <https://earthquake.usgs.gov/static/lfs/nshm/qfaults/Reports/289.pdf>
- USGS 2024 – United States Geological Survey (USGS). Earthquake Hazard Program, Unified Hazard Tool. 2024. Accessed by applicant. Available online at: <https://earthquake.usgs.gov/hazards/interactive/index.php>
- WWD GSA 2022 – Westlands Water District (WWD) Groundwater Sustainability Agency (GSA) and County of Fresno. Westside Subbasin Groundwater Sustainability Plan 2022. Accessed by applicant. Available online at: <https://sgma.water.ca.gov/portal/gsp/preview/8>

5.7 Hazards, Hazardous Materials/Waste, and Wildfire

This section describes the hazards, hazardous materials/waste, and wildfire characteristics of the proposed project, evaluates the type of significance of impacts that could occur because of the proposed project, and identifies measures to avoid or reduce any impacts to less than significant.

5.7.1 Environmental Setting

Existing Conditions

Hazardous Materials

Hazardous materials are defined by federal and state regulations that aim to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). Hazardous materials are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14), and also in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, which provides the following definition: “*A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.*”

The project would involve limited transport, storage, use, and disposal of hazardous materials during construction, operation and maintenance, and decommissioning activities. Some examples of hazardous materials that may be used during construction, operation and maintenance, and decommissioning activities would include unleaded gasoline, diesel fuel, oil, lubricants (for example, motor oil, transmission fluid, and hydraulic fluid), solvents, adhesives, and paint materials. Operation and maintenance of the project would not require as many hazardous materials as construction or decommissioning. All hazardous materials would be transported, stored, handled, and used in accordance with applicable laws, ordinances, regulations, and standards (LORS). A summary of hazardous materials that could be used for the project during construction, operation and maintenance is presented in **Table 5.7-1**.

Hazard Exposure. An exposure route is the way a contaminant enters an individual or population. Typically, exposure occurs by one of the three exposure routes: inhalation, ingestion, or dermal (U.S. EPA 2023).

Project Hazardous Materials Use. Storage locations for the hazardous materials that would be used during construction and operations are described in **Table 5.7-1**. Hazardous materials that would be used during construction and operations are summarized in **Table 5.7-2**, including trade names, chemical names, Chemical Abstract Service (CAS) numbers, maximum quantities on-site, reportable quantities (RQ), California accidental release program (CalARP) threshold planning quantities (TPQ), and status as Proposition 65 chemicals (chemicals known to be carcinogenic or cause reproductive problems in humans). Health hazards, toxicity, flammability, and chemical incompatibility information are summarized for these materials in **Table 5.7-3**. Toxic effects and exposure levels for regulated substances are summarized in **Table 5.7-4**.

TABLE 5.7-1 USE AND LOCATION OF HAZARDOUS MATERIALS

Chemical Name	Use/Purpose	Quantity	Storage Location	State	Type of Storage Container	Project Phase
Cleaning chemicals/ detergents	Cleaning	NA	Operations and Maintenance (O&M) Building	Liquid	Cans, buckets	Construction and/or O&M
Paint	Construction and O&M	NA	O&M Building	Liquid	Cans, buckets	Construction and/or O&M
Diesel (dyed and clear)	Fueling Equipment	14,000 gallons	Office Trailers and/or Tooling Connex Boxes	Liquid	Aboveground storage tanks (ASTs)	Construction
Propane	Construction	1,600 gallons	O&M Building	Gas	Pressurized tank	Construction
Adhesives	Construction and O&M	NA	O&M Building	Liquid, Solid	Bottles	Construction and/or O&M
Sealants	Construction and O&M	NA	O&M Building	Liquid	Bottles	Construction and/or O&M
Hydraulic fluids	O&M	215,800 gallons	Transformers	Liquid	Cans, ASTs	O&M
Sulfur hexafluoride	O&M	620 gallons	HV breakers	Gas	Cylinders	Construction and/or O&M
Mineral oil	O&M	355,000 gallons	Generator step-up (GSU) transformers	Liquid	Drums, ASTs	Construction and/or O&M
Sulfuric acid	O&M	690 gallons	Battery cells	Liquid	In cells	Construction and/or O&M
Ethylene glycol solution	BESS	NA	Battery Energy Storage System (BESS)	Liquid	NA	Construction and/or O&M
1,1,1,2- tetrafluoroethane	BESS	NA	BESS	Gas	Cylinders	Construction and/or O&M
Gasoline	O&M	50 gallons	Flammables storage locker outside O&M Building	Liquid	Cans	O&M
Gasoline	Fueling Equipment	1,800 gallons	Flammables storage locker outside O&M Building	Liquid	Cans	Construction
Coolant	Construction and O&M	50 gallons	NA	Liquid	Cans	Construction and/or O&M
Lubricants	Construction and O&M	NA	NA	Liquid	Cans, ASTs	Construction and/or O&M
Aqueous Ammonia (20-30%)	O&M	NA	NA	Liquid	Cans, bottles	Construction and/or O&M

TABLE 5.7-1 USE AND LOCATION OF HAZARDOUS MATERIALS

Chemical Name	Use/Purpose	Quantity	Storage Location	State	Type of Storage Container	Project Phase
Lithium-ion batteries	Construction and O&M	7,379 to 14,757 tons	Energy Storage	Solid	NA	Construction and/or O&M

Notes: Not Available

Source: RCI 2023o

TABLE 5.7-2 CHEMICAL INVENTORY, DESCRIPTION OF HAZARDOUS MATERIALS ON-SITE AND REPORTABLE QUANTITIES

Trade Name	Chemical Name	CAS Number	Maximum Quantity On-site	CERCLA SARA RQ ^a	RQ of Material as Used On-site ^b	EHS TPQ ^c	Regulated Substance TQ ^d	Prop 65
Cleaning chemicals/detergents	Various	Various	NA	--	--	--	--	No
Paint	Various	Various	NA	--	--	--	--	No
Diesel No. 2	Diesel No. 2	68476-34-6	2,000 gallons	--	--	--	--	No
Propane	Propane	74-98-6	1,600 gallons	--	--	--	--	No
Adhesives	Various	Various	NA	--	--	--	--	No
Sealants	Various	Various	NA	--	--	--	--	No
Hydraulic fluid (FR3 natural ester fluid)	FR3	None	427,380 gallons	42 gallons ^e	42 gallons ^e	--	--	No
Sulfur hexafluoride (SF ₆)	Sulfur hexafluoride	2551-62-4	620 gallons	--	--	--	--	No
Paraffin oil	Mineral oil	8042-47-5	210,215 gallons	42 gallons ^e	42 gallons ^e	--	--	No
Electrolyte	Sulfuric Acid	7664-93-9	690 gallons	1,000 lbs	3,333 lbs	1,000 lbs	1,000 lbs	Yes
Ethylene glycol solution	Ethylene glycol solution	107-21-1	NA	--	--	--	--	Yes
1,1,1,2-tetrafluoroethane	1,1,1,2-tetrafluoroethene	811-97-2	NA	--	--	--	--	No
Gasoline	Gasoline	8006-61-9; 86290-85-1	50 gallons	--	--	--	--	No
Coolant	Various	Various	50 gallons	--	--	--	--	No
Lubricants	Oil	None	NA	42 gallons ^e	42 gallons ^e	--	--	No
Lithium-ion batteries	Lithium-ion Batteries	Various	14,757 tons	--	--	--	--	No

TABLE 5.7-2 CHEMICAL INVENTORY, DESCRIPTION OF HAZARDOUS MATERIALS ON-SITE AND REPORTABLE QUANTITIES

Trade Name	Chemical Name	CAS Number	Maximum Quantity On-site	CERCLA SARA RQ ^a	RQ of Material as Used On-site ^b	EHS TPQ ^c	Regulated Substance TQ ^d	Prop 65
------------	---------------	------------	--------------------------	-----------------------------	---	----------------------	-------------------------------------	---------

Notes:

a RQs are for a pure chemical, per CERCLA SARA (ref. 40 Code of Federal Regulations (CFR) Section 302, Table 302.4). Releases equal to or greater than the RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment and human health or safety must be reported.

b RQ for materials as used on-site. Since some of the hazardous materials are mixtures that only contain a percentage of an RQ, the RQ of the mixture can be different than for a pure chemical. For example, if a substance only contains 10 percent of a reportable chemical and the RQ is 100 pounds, the RQ for that material will be (100 pounds)/(10%) = 1,000 pounds.

c EHS TPQ (ref. 40 CFR Part 355, Appendix A). If quantities of EHS materials equal to or greater than the TPQ are handled or stored on-site, they must be registered with the local Administering Agency (i.e., Fresno County Environmental Health – CUPA/Hazardous Materials Handling Program).

d TQ is from Title 19 CCR Section 2770.5 (state) or Title 40 CFR Section 68.130 (federal).

e State RQ for oil spills that will reach California state waters [CA Water Code Section 13272(f)]

--: No reporting requirements. The chemical has no listed threshold under this requirement. NA: not available

CAS: Chemical Abstract Service CCR: California Code of Regulations

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act CFR: Code of Federal Regulations

EHS: Extremely Hazardous Substances Lbs: pounds

Prop 65: Proposition 65 RQ: Reportable Quantity

SARA: Superfund Amendments and Reauthorization Act TPQ: Threshold Planning Quantity

TQ: Threshold Quantity

NA: Not Available

Source: RCI 2023o

TABLE 5.7-3 TOXICITY, REACTIVITY, AND FLAMMABILITY OF HAZARDOUS SUBSTANCES STORED ON-SITE

Hazardous Material	Physical Description	Health Hazard/Toxicity	Reactivity and Incompatibilities	Flammability
Cleaning chemicals/detergents	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Paint	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Diesel No. 2	Oily, light liquid	May be carcinogenic	Strong oxidizers, acids	Flammable
Propane	Colorless, odorless gas	Liquid can cause burns similar to frostbite	Strong oxidizers	Flammable
Adhesives	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Sealants	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Hydraulic fluid (FR3 natural ester fluid)	Light green liquid	Minimal irritation or no effect	Strong oxidizers, Strong Alkali	Combustible
Sulfur hexafluoride (SF ₆)	Colorless, odorless gas	Can displace oxygen and cause rapid suffocation	None	Nonflammable
Paraffin oil	Oily, colorless liquid	May be fatal if swallowed or enters airways	Strong oxidizers	Combustible
Sulfuric acid	Colorless liquid	Causes burns by all exposure routes	Strong oxidizers, combustible material, bases, organic materials, reducing agents, finely powdered metals, peroxides	Nonflammable
Ethylene glycol solution	Viscous, colorless liquid	May cause skin, eye, and respiratory tract irritation	Strong oxidizers, strong acids, strong bases, aldehydes	Combustible
1,1,1,2-tetrafluoroethane	Colorless gas, faint ethereal odor	Liquid can cause burns similar to frostbite	None	Nonflammable
Gasoline	Transparent to light yellow liquid	Carcinogenic, may cause irritation to skin, nose, throat, and lungs	Strong oxidizers	Flammable
Coolant	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Lubricants	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels

TABLE 5.7-3 TOXICITY, REACTIVITY, AND FLAMMABILITY OF HAZARDOUS SUBSTANCES STORED ON-SITE

Hazardous Material	Physical Description	Health Hazard/Toxicity	Reactivity and Incompatibilities	Flammability
Lithium-ion Battery	Battery product	Aquatic chronic toxicity; may be carcinogenic	Not considered reactive under normal conditions at ambient temperature; incompatible with combustible materials, organic chemicals, strong acids, reducing substances, strong oxidizers, and chemically active metals	Flammable

Notes:

a In accordance with Caltrans regulations, under 49 CFR Section 173: flammable liquids have a flash point less than or equal to 141°F; combustible liquids have a flash point greater than 141°F

Source: RCI 2023o

TABLE 5.7-4 TOXIC EFFECTS AND EXPOSURE LEVELS OF REGULATED SUBSTANCES

Chemical Name	Toxic Effects	Exposure Levels
Sulfuric acid	Contact can cause burns by all exposure routes. Inhalation of vapor may cause serious lung damage. Chronic exposure may cause tracheobronchitis, stomatitis, conjunctivitis, and gastritis. Gastric perforation and peritonitis may occur and potentially followed by circulatory collapse.	Occupational Exposures: PEL: 1 mg/m3 OSHA TLV: 0.2 mg/m3 ACGIH TWA: 1 mg/m3 NIOSH STEL: 3 mg/m3 Cal/OSHA Hazardous Concentrations: IDLH: 15 ppm Sensitive Receptors: ERPG-1: 2 ppm ERPG-2: 10 ppm ERPG-3: 120 ppm

Notes:

ACGIH: American Conference of Governmental Industrial Hygienists Cal/OSHA: California Occupational Safety and Health Administration ERPG: Emergency Response Planning Guidelines

IDLH: Immediately Dangerous to Life and Health

NIOSH: National Institute for Occupational Safety and Health OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit, 8-hour TWA STEL: Short Term Exposure Limit

TLV: Threshold Limit Value TWA: Time Weighted Average

Source: RCI 2023o

Environmental Contamination. Existing and past land use activities are commonly used as indicators of sites or areas where hazardous material storage and use may have occurred or where potential environmental contamination may exist. For example, many historic and current industrial sites have soil or groundwater contaminated by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and rural areas, contaminated surface runoff from polluted sites, and contaminated groundwater plumes.

The project would be located on approximately 9,500 acres in western Fresno County. Existing land uses within the project boundaries consist almost exclusively of agriculture or fallowed agricultural lands. Recent drought has forced farmers to fallow hundreds of thousands of acres in Fresno County. Westlands Water District, which currently owns a majority of lands within the project site, is actively pursuing retirement of 100,000 acres of agricultural land within its boundaries (including 9,100 acres on which the project is located) in order to reallocate water to agricultural lands which are not impaired. This retirement of agricultural land at the project site will occur with or without the Darden Clean Energy Project. (RCI 2023nn)

In September 2022, Stantec Consulting Services Inc. (Stantec) completed a Phase I Environmental Site Assessment (ESA) report of the property on approximately 9,116 acres, on behalf of IP Darden I, LLC, the project applicant. The intended use of this Phase I ESA is for due diligence in support of developing the parcels with renewable energy infrastructure. The Phase I ESA was conducted in conformance with the requirements of American Society for Testing and Materials (ASTM) International Designation E2247-16 Phase I Environmental Site Assessment Process for Forestland or Rural Property, and All Appropriate Inquiry (AAI) as defined by the US-EPA in Title 40 of the CFR, Part 312, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM or AAI practice are described in Section 2.3. (RCI 2024n).

In addition to the Phase I ESA, on September 19, 2022, Stantec collected soil samples from 41 locations at the project site. The sampling was conducted in conformance with the requirements of ASTM International Designation E1903-11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process. Sample locations B-1 through B-40 were distributed across the parcels and were collected from a depth of 0.5 to 1.0 feet below ground surface (bgs). One additional soil sample (B41) was collected from a soil stockpile in the northeast portion of 050-030-26ST. The soil samples were collected in glass jars and delivered to Advanced Technology Laboratories (ATL) for analysis of organochlorine pesticides (OCPs) by United States Environmental Protection Agency (EPA) Method 8081A, and total arsenic and lead by EPA Method 6010B. The analytical results for OCPs and total lead were compared to the more conservative commercial use screening level established by the California Department of Toxic Substances Control (DTSC) or EPA Regional Screening Levels (RSLs). Arsenic concentrations were compared to those considered to be

naturally occurring in California, typically between 0.6 and 12.0 mg/kg (DTSC 2020). (RCI 2023n)

Due to concerns for health hazards posed to workers involved in soil disturbances, trenching, and excavation activities, the California Energy Commission (CEC) requested additional testing of site soil and water. Stantec collected additional soil samples and well-water samples in July 2024, which were analyzed for the herbicide dimethyl tetrachloroterephthalate (DCPA or Dacthal) and CAM-17 metals per the California Administrative Manual, as well as OCPs. Using input from the CEC, the applicant sited the soil sample locations across the project area to provide representative results across the photovoltaic (PV) facility, the Pacific Gas and Electric Company (PG&E) utility switchyard parcel, and the gen-tie corridor. Soil samples were collected between zero and six inches below surface and five subsamples were collected at each sampling location, then sent to the lab for analysis. For consistency, the water samples were collected from the same groundwater wells previously sampled, with one well located in the gen-tie corridor and the other 1.4 miles north of the gen-tie corridor. Irrigation pumps ran for one hour prior to sampling to ensure the collection of an accurate and representative sample of the water table quality. Although these wells have not been identified as the source for construction and operations water, the water samples provide representative data of water quality within the area surrounding the project. (RCI 2024w). The findings of shallow soil sampling activities are summarized below.

Arsenic was detected in soil at concentrations that exceeded screening thresholds. However, arsenic is known to occur naturally in soils in California and arsenic concentrations in the State generally range from 0.6 mg/kg to 11 mg/kg (Kearney Foundation 1996). The concentrations of soil samples collected at the project site are within the background range cited by the Kearney Foundation.

Hazardous Waste and Substance Sites. Staff reviewed the State Water Resources Control Board (SWRCB) Geotracker and the DTSC EnviroStor websites which did not identify any known hazardous material or environmental contamination sites within or adjacent to the project site (SWRCB 2024; DTSC 2024).

The 2022 Phase I ESA identified potential or existing environmental conditions through a review of current and historical uses of the project site, as well as the extent of site contamination (RCI 2024n). The 2022 Phase I ESA identified the following:

- Historical oil drilling operations are known to have occurred at the project site. The potential presence of impacted soils associated with drilling mud pits/sumps is considered a recognized environmental condition (REC). Stantec recommended that further investigation be performed in the area west/northwest of the Leoscher "1" well where the rectangular depressions were noted in the 1940 aerial photograph to evaluate potential impact to soil at this location. Since there was no visible indication of mud pits/sumps in any of the other aerial photographs, Stantec recommended that a Soil Management Plan (SMP) be prepared that provides the procedures, methodologies and reporting requirements if unknown impacts to soil are

encountered during demolition, grading and construction activities at the project site, including areas where further investigation was recommended.

- Abandoned oil wells were identified within the footprint of the project site. Seven abandoned dry holes were reportedly within the project boundaries according to data provided on the California Geologic Energy Management Division (CalGEM) Well Finder online database.
- Irrigation/groundwater wells were observed at the project site during reconnaissance activities. Stantec recommended proper abandonment of the wells under regulatory oversight unless the wells are used as part of the project.
- At least 16 groundwater monitoring wells were observed within the footprint of the project site during reconnaissance. Stantec recommended that the wells be properly abandoned under regulatory oversight.

In addition, the 2022 Phase I ESA includes the results of shallow soil sampling that was undertaken to investigate potential agricultural impacts at the project site. The findings of shallow soil sampling activities are summarized below:

- OCPs and lead were reported at low concentrations that do not exceed the DTSC commercial screening levels or California hazardous waste thresholds (DTSC 2020a).
- Arsenic was reported at concentrations exceeding DTSC commercial screening level; however, arsenic concentrations were within the range considered to be naturally occurring in California (DTSC 2020b).
- No further assessment regarding OCPs, lead, and arsenic was recommended for the project site.

The subject property investigated for the 2023 Phase I ESA and Limited Soil Sampling included the gen-tie corridor, the utility switchyard parcel, and the potential medium voltage (MV) collector line alignments (RCI 2024y, Sheet G.200). The 2023 Phase I ESA and Limited Soil Sampling report includes an examination of potential or existing environmental conditions through a review of current and historical uses of the lands (Stantec 2023a). The 2023 Phase I ESA identifies the following findings:

- Groundwater wells were observed at the project site during the field reconnaissance activities. Stantec recommended that the wells be abandoned under permit from Fresno County Department of Public Health (FCDPH) in accordance with the California Well Standards Ordinance as stated in Bulletin 74-81, unless the wells will be used by the proposed development. Stantec recommended that information/documentation on the location, status, and depth of the wells be obtained so that a plan can be developed with regard to use or destruction of the wells.
- Aboveground storage tank (AST) containing oil were observed throughout the investigation areas that are believed to be related to the irrigation well pumps. Minor soil staining was observed near the irrigation well sites but was limited to topsoil in

an approximately 5-foot by 5-foot area. This soil impact is considered de minimis given the minimal amount of staining.

- Significant oil staining was observed on two irrigation well pads along the MV collector line easement, approximately 0.5-mile west of the intersection of Harlan Avenue and Colusa Avenue, and along the gen-tie line easement, at the northeast corner of the intersection of Harlan Avenue and Calaveras Avenue. If any of the gen-tie structures/towers, or belowground collector lines are specifically planned to be constructed within these areas (i.e., where stained soil was located around well pumps) and the lines cannot be rerouted to avoid these areas, Stantec recommends that soil samples be collected and evaluated for potential contaminants of concern in these areas.
- Vista Verde Farms is at the corner of Harlan Avenue and Stanislaus Avenue within the gen-tie easement. This facility is listed in the hazardous waste tracking system (HWTS) database from 1998 through 2002. There are no reported releases associated with this property. However, during the field reconnaissance a large AST and numerous used 50-gallon drums were observed at this. Since the gen-tie lines are aboveground, no further investigation is recommended. However, if the gen-tie line plans call for an underground component in this area, Stantec recommended soil sampling on Assessor's Parcel Number (APN) 045-080-49S to evaluate whether contaminants of concern are present in soil. Likewise, if procurement of this parcel is required, or if development plans include structures or towers within this parcel, soil sampling is recommended.

During this investigation, Stantec completed additional shallow soil sampling activities at 30 locations in April 2023 along the proposed gen-tie corridor. Soil samples were analyzed for arsenic, lead, selenium, and OCPs. The findings of the limited soil sampling are summarized below:

- OCPs and lead were reported at low concentrations that did not exceed DTSC commercial screening levels or California hazardous waste levels.
- Arsenic was reported at concentrations exceeding DTSC commercial screening levels and naturally occurring background concentrations but were within the range considered to be naturally occurring in California (DTSC 2020b).
- No further assessment regarding OCPs, lead, and arsenic was recommended.

Stantec completed a Phase II ESA that included soil sampling within the 42 parcels comprising the proposed footprint for the solar subarray portion of the project (Stantec 2023b). The objectives of the 2023 Phase II ESA included the following:

- To assess the potential accumulation of selenium in shallow soils, as requested by the Fresno County Planning Commission
- To confirm the presence of a suspected mud pit/sump on APN 050-030-24ST
- To locate historical oil wells at the project site

The results of the Phase II ESA are summarized as follows:

- Selenium was not detected above the laboratory reporting limits of 5.0 milligrams per kilogram (mg/kg) in the soil samples collected within the project site. No further assessment was recommended with regard to selenium.
- Five test pits were excavated to 8 feet bgs in the area where a mud pit/sump was suspected. No stained, odorous, or non-native soils were observed in the test pits; therefore, no soil sampling occurred. No further investigation was recommended with regard to the surface impoundments noted in the 1940 aerial photograph to the northwest of the "Loescher" 1 well. Stantec prepared a Soil Management Plan (SMP) as a contingency document that provides procedures, methodologies, and reporting requirements in the event that unknown impacts to soil are encountered during grading, trenching, or other construction activities that would involve ground disturbance at the project site.
- In an effort to locate abandoned oil wells, vegetation was cleared, geophysical surveys were conducted, and the test pits were excavated to visually confirm the top of the steel well casings. The abandoned well search activities successfully located all seven of the wells recorded by CalGEM records as being within the boundaries of the project site. In the unlikely event that oil well casings are encountered during construction activities, any future work required by CalGEM on the oil wells would be required of the owner of the project site. In such instances, CalGEM would require notification in the case of any physical alteration such that proper permitting could be completed prior to making alterations.

As explained earlier, to address a Data Request from the CEC, West Yost Associates collected additional soil samples for the applicant and well-water samples in July 2024, which were analyzed for the herbicide Dacthal and CAM-17 metals per the California Administrative Manual, as well as OCPs. The results of the July 2024 soil and water samples are provided as Appendix A of Data Request Response Set 5 (RCI 2024w).

The analytical results and screening thresholds for the July 2024 soil samples are provided in Appendix A, Table 3 and the analytical results and screening threshold for the water samples are provided in Appendix A, Table 4 of Data Request Response Set 5 (RCI 2024w). Concentrations of target soil analytes were compared to EPA Regional Screening Levels (RSL) for industrial soils, DTSC Screening Levels (SL) for commercial/industrial soils, and the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESL) for commercial/industrial soils. Concentrations of target water analytes were compared to the maximum contaminant levels (MCL).

Based on comparison to the thresholds described above, only arsenic was detected in soil at concentrations that exceeded screening thresholds. However, arsenic is known to occur naturally in soils in California and arsenic concentrations in the State generally range from 0.6 mg/kg to 11 mg/kg (Kearney Foundation of Soil Science Division of Agriculture and Natural Resources [Kearney 1996]). The concentrations of soil samples

collected at the project site are within the background range cited by the Kearney Foundation. The herbicide DCPA (Dacthal) was not detected above laboratory reporting limits in either soil or water samples collected.

Land Use and Sensitive Receptors. Land use in the immediate vicinity of the project site is primarily undeveloped current or former agricultural land with some residential properties. Within a 6-mile radius of the project site, there are several businesses and residences. Single family residents along South Sonoma Avenue, South Napa Avenue, and West Stroud Avenue are adjacent to the project site. Single family residents along West Mt Whitney Avenue and West Cerini Avenue are also near the project site. No residences are in close proximity to the utility switchyard west of I-5.

Airports. The nearest airport is the San Joaquin Airport which is approximately 5.5 miles to the north and northeast of the project site.

Schools. There are no schools within 0.25 miles of the project site. The nearest schools to the project site are the Westside Elementary School that is south of Mt. Whitney Avenue and approximately three miles south of the project site, Cantua Elementary School approximately 4 miles northwest of the project site on West Clarkson Avenue, and the Helm Elementary School 4 miles northeast of the project site at the intersection of West Kamm Avenue and State Route (SR) 145.

The nearest school to the PG&E Utility Switchyard is Cantua Elementary School, approximately six miles northeast on West Clarkson Avenue. As explained in the Project Description (see **Section 3, Project Description** for more discussion), there are three potential scenarios for the PG&E Downstream Network Upgrades.

The nearest schools under each scenario are as follows:

- Scenario 1: Westside Elementary School nine miles east on West Excelsior Ave, and Cantua Elementary School approximately five miles northeast on West Clarkson Ave.
- Scenario 2: Westside Elementary School nine miles east on West Excelsior Ave, and Cantua Elementary School approximately five miles northeast on West Clarkson Ave.
- Scenario 3: Westside Elementary School ten miles east on West Excelsior Ave, and Cantua Elementary School approximately six miles northeast on West Clarkson Ave.

Emergency Evacuation Routes. The project site would be located in a rural area adjacent to and intersected by Interstate 5 (I-5). W Kamm Ave lies north of the solar facility and BESS, and W Mount Whitney Ave lies south, allowing egress/ingress in the event of an emergency. From the PG&E Utility Switchyard, an on-ramp to Interstate-5 could be accessed from South Derrick Avenue allowing egress/ingress in the event of an emergency. In 2018, Fresno County established a Multi-Jurisdictional Hazard Mitigation Plan for the purpose of reducing or eliminating long-term risk to people and property from hazards, including hazardous materials. Evacuation routes are a concern of the public and the Multi-Jurisdictional Hazard Mitigation Plan. No formal evacuation routes are identified in the plan. The solar facility project area is sparsely populated with

multiple routes of vehicle evacuation available to the north, south, east, and west. The western portion of the project area (proposed PG&E utility switchyard) has limited evacuation routes available to the west, being confined by the adjacent hills.

Wildfire

Fire Hazard Mapping

CAL FIRE Hazard Severity Zones. The California Department of Forestry and Fire Protection (CAL FIRE) identifies and maps areas of significant fire hazards based on fire history, existing and potential fuel (natural vegetation), predicted flame length, blowing embers, terrain, typical fire weather for the area, and other relevant factors. The maps identify this information as a series of Fire Hazard Severity Zones (FHSZ), which are progressively ranked as un-zoned, moderate, high, and very high zones. (CAL FIRE 2024).

Wildland FHSZ in California are divided into State, local, or federal government responsibility areas. State Responsibility Areas (SRA) are locations where the financial responsibility of preventing and suppressing fires falls primarily on the State. The westernmost components of the project, including the project utility switchyard parcel is within an SRA, on a parcel that is in a Moderate and High FHSZ. The remainder of the project site is not within an SRA or FHSZ, and the proposed locations for the solar facility, step-up substation, and BESS are more than eight miles east of the nearest SRA or FHSZ (CAL FIRE 2023).

California Public Utilities Commission (CPUC) High Fire-Threat District Map.

The CPUC has adopted over the last two decades a series of fire safety rules which includes the preparation of Fire-Threat and High Fire-Threat District (HFTD) Maps and the identification, evaluation, and adoption of more fire-safety regulations for the HFTDs. Areas mapped as high fire threat are required (under CPUC General Orders 95, 165, and 166) to have increased patrols along overhead lines, increased vegetation clearances and frequency of vegetation clearance, increased inspections of aerial communications facilities, and increased maintenance and repairs to correct fire hazards. The HFTD maps identify three tiers of fire threat/risk: Tier 1 zones near communities, roads, and utility lines, and are a direct threat to public safety; Tier 2 fire-threat areas outline areas where there is a higher risk (including likelihood and potential impacts on people and property) from utility related wildfires; and Tier 3 fire-threat areas outline areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility related wildfires. The project is not within a HFTD zone and not adjacent to any HFTD zone (CPUC 2024)

Fire History. The Fresno County Multi-Jurisdictional Hazard Mitigation Plan identifies areas west of I-5 as one of the principal areas of Fresno County with a large, damaging fire history, and approximates 120 to 200 annual fire occurrences in SRAs and 1,400 to 1,600 in LRAs within the County (Fresno County 2018). The Fire and Resource Assessment Program (FRAP) annually maintains and distributes a historical fire

perimeter GIS data set from across public and private lands in California. The GIS data is jointly developed with the cooperation of the United States Forest Service Region 5, the Bureau of Land Management, the National Park Service and the Fish and Wildlife Service. Immediately west of I-5, near the westernmost Project components, the Ciervo Fire burned approximately 62,900 acres in 1979; the Cantua Creek Fire burned approximately 468 acres in 1984; the Lightning 2 Fire burned approximately 211 acres in 1987; the 3 Rocks Fire burned approximately 9,435 acres in 2006; and the Five Fire burned approximately 2,372 acres in 2007 (CAL FIRE 2025). The nearest edge of the Ciervo Fire burned less than 500 feet west of the utility switchyard. The Cantua Creek Fire burned in the same vicinity as the utility switchyard. The nearest edge of the Lightning 2 Fire burned approximately 3.75 miles northwest of the utility switchyard. The nearest edge of the 3 Rocks Fire burned approximately 3.25 miles northwest of the utility switchyard. The nearest edge of the Five Fire burned approximately 3.5 miles northwest of the utility switchyard.

In summary, the GIS data confirm the information in the Fresno County Multi-Jurisdictional Hazard Mitigation Plan that wildfire dangers are west of I-5 and just to the west of the proposed PG&E Switchyard and just west of the three potential routes for the PG&E downstream network upgrades. The PV solar panel locations, BESS and associated equipment are all more than eight miles east of any of the historical fires. The main factor for the location of the historic fires west of the facility is that it is where the hills begin to rise from the agricultural fields. The fire history shows fires in the hills but not in the flat agricultural areas.

Regulatory

Laws, ordinances, regulations, and standards (LORS) related to hazardous materials/waste, aviation safety, hazards, and wildfire are summarized below. Details regarding federal, state, and local LORS that apply to the project are included. Staff's analysis of project compliance with these LORS is presented in **Table 5.7-2** Conformance with Applicable LORS.

Federal

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.) authorizes the EPA to control hazardous waste from "cradle to grave" (generation, transportation, treatment, storage, and disposal). The EPA approved California's RCRA program, referred to as the Hazardous Waste Control Law (Health and Safety Code § 25100 et seq.) in 1992.

Toxic Substances Control Act. The Toxic Substances Control Act (TSCA) (15 U.S.C. § 2601 2692) authorizes the EPA to require reporting, record-keeping, testing requirements, and restrictions related to chemical substances and/or mixtures. It also addresses production, importation, use, and disposal of specific chemicals, such as poly-

chlorinated biphenyls (PCBs), asbestos-containing materials, lead-based paint, and petroleum.

Comprehensive Environmental Response, Compensation, and Liability Act.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601 et seq), including the Superfund program, provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Department of Transportation. The United States Department of Transportation (DOT) is the primary federal agency responsible for regulating the proper handling and storage of hazardous materials during transportation (Title 49 CFR §§ 171-177 and 350-399).

Clean Water Act. The Clean Water Act (CWA) is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The EPA implements provisions of the CWA through a variety of regulations, including the National Contingency Plan, and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state.

As part of the CWA, the EPA oversees and enforces the Oil Pollution Prevention regulation (Title 40, CFR, Part 112), which is often referred to as the Spill Prevention, Control, and Countermeasure (SPCC) "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement SPCC Plans. A facility is subject to SPCC regulations if the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States. The rule specifies that proactive, and not passive, measures be used to respond to oil discharges.

Federal Aviation Administration. The Federal Aviation Administration (FAA) Part 77—Safe, Efficient Use, And Preservation of The Navigable Airspace (49 CFR Part 77) establishes standards and notification requirements for objects that may impact navigable airspace. Airports and navigable airspace that are not administered by the Department of Defense (DOD) are under the jurisdiction of the FAA. This regulation includes: (a) FAA notification requirements for proposed construction, or the alteration of existing structures, that meet specific standards; (b) the standards used to determine obstructions to air navigation, and navigational and communication facilities; (c) the process for aeronautical studies of obstruction to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities or equipment; and (d) the process to petition the FAA for discretionary review of determinations, revisions, and extensions of determinations.

Additionally, FAA standards and Advisory Circular 70/7460-1L generally require any temporary or permanent structure, including appurtenances, that exceeds an overall height of 200 feet above ground level (AGL) to meet the requirements to be marked and/or lighted.

Hazardous Materials Transportation Act. DOT, in conjunction with the EPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to safe storage and transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA) 49 U.S.C. 5101-5128. DOT regulations implementing the Act (49 CFR parts 171-180), regulate the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials. This also includes regulations relevant to the storage of explosives, as well as the packaging, labeling, materials compatibility, driver qualifiers, and safety of transported explosives.

State

California Environmental Protection Agency. The California Environmental Protection Agency (Cal EPA), created in 1991, unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), SWRCB, RWQCBs, Integrated Waste Management Board, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies under the Cal EPA "umbrella" provide protection of human health and the environment and ensure the coordinated deployment of state resources. Their mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

The California Hazardous Waste Control Law. CalEPA administers the California Hazardous Waste Control Law to regulate hazardous wastes. The Hazardous Waste Control Law lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Department of Toxic Substances Control. DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, clean-ups existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. The hazardous waste regulations overseen by DTSC establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous waste that cannot be disposed of in landfills.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. Regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) address six elements: hazardous waste generators and hazardous waste onsite treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories (Health and Safety Code § 25404 et seq.). The Unified Program requires CalEPA to certify local government agencies, known as Certified Unified Program Agencies (CUPAs) as able to implement all the required environmental programs and to consolidate, coordinate and make them consistent within their jurisdiction. State partner agencies involved in the implementation of the Unified Program and providing technical assistance to CUPAs include Cal EPA, CAL FIRE, DTSC, and SWRCB. The CUPA for the project area is the Fresno County Environmental Health Department, HazMat Compliance Program.

California Department of Industrial Relations, Division of Occupational Safety and Health Administration. The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety. They oversee the handling and use of hazardous materials (8 CCR Sections 5139-5223), and the protection of workers exposed to wildfire smoke (8 CCR Section 5141.1). Cal/OSHA standards are generally more stringent than federal regulations. Under Sections 337-3339, employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure. The regulations under Sections 337-339 specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. Section 5141.1 requires identification of harmful exposures, a system for communicating wildfire smoke hazards, and training and instruction about wildfire smoke hazards.

California Public Utilities Commission. The California Public Utilities Commission (CPUC) regulates private investor-owned utilities in the state of California. The following CPUC General Orders are applicable to the project.

General Order 95. CPUC General Order 95 applies to construction and reconstruction of overhead electric lines. General Order 95 includes Rules which apply to overhead electric lines located in Tier 2 or Tier 3 HFTDs, which include corrective actions, maintenance, increased inspection, vegetation management to establish clearances, and establishment of minimum vertical, horizontal, and radial clearances of wires from other wires.

General Order 165. General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. A "Patrol" inspection, defined as a simple visual inspection of utility equipment and structures that is designed to identify obvious structural problems and hazards, must be performed at least once per year for each piece of equipment and structure. "Detailed" inspections, where individual pieces of equipment and structures are carefully examined, are required every 5 years for all overhead conductor and

cables, transformers, switching/protective devices, and regulators/capacitors. A utility subject to this General Order must submit an annual report of its inspections by July 1 of each year for the previous year.

General Order 166. General Order 166 requires that Investor-Owned Utilities (IOUs) develop a Fire Prevention Plan, which describes measures that the electric utility will implement to mitigate the threat of power line fires. Under General Order 166 the IOUs are required to outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area. IOUs are also required to prepare an emergency response plan. Further, utilities are required to report annually to the CPUC regarding compliance with General Order 166.

Defensible Space and the Fire Safe Regulations. State law requires a minimum clearance (defensible space) of 100-feet around structures (Pub. Res. Code §§ 4290, 4291). Implementing regulations (the "Fire Safe Regulations") provide related requirements to be implemented in a SRA including road standards for fire equipment access (14 CCR § 1273 et seq.); standards for signs identifying streets, roads, and buildings (14 CCR § 1274 et seq.); requirements for minimum private water supply reserves for emergency fire use (14 CCR § 1275 et seq.); and requirements for fuel breaks such as defensible space and greenbelts (14 CCR §§ 1272, 1276 et seq.).

California Public Resources Code – Fire Protection. The California Public Resources Code (PRC) Division 4, Part 2 – Protection of Forest, Range, and Forage Lands includes prohibited activities, fire safety and prevention provisions that apply to SRAs, forested areas, timber harvesting areas, and high fire danger areas.

PRC Section 4292 states that any person that owns, controls, operates, or maintains any electrical transmission or distribution line has primary responsibility for fire protection of such areas, and shall maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower. PRC section 4293 states that any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass covered land which has primary responsibility for the fire protection of such area, shall maintain a clearance of the respective distances.

PRC section 4119 authorizes CAL FIRE or its authorized agent to inspect properties to determine whether they comply with state forest and fire laws, regulations, or use permits. Section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices which may generate a spark or flame if the equipment is located on or near forested land or land covered in bush or grass. It also establishes requirements such as clearing flammable material within 10 feet of the area of operation, as well as carrying of fire response equipment such as a shovel, backpack pump water type fire extinguisher. Section 4428 requires

certain firefighting equipment to be used when operating internal combustion engines on or near land covered by forest bush or grass between April 1 and December 1 of any year, or other times when ground litter and vegetation could sustain combustion and facilitate the spread of fire.

PRC section 4431 requires users of gasoline-fueled internal combustion-powered equipment located within 25 feet of forest, brush, or grass to keep firefighting tools at the immediate location of use. Section 4442 restricts the use and operation of any internal combustion engine that uses hydrocarbon fuels on any forest, brush, or grass areas unless the engine is equipped with a spark arrestor, as defined section 4442(c) and pursuant to section 4443.

Porter-Cologne Water Quality Act. This state law provides a comprehensive water quality management system for the protection of California waters. The act designates the SWRCB as the ultimate authority over State water rights and water quality policy and also established nine RWQCBs to oversee water quality on a day-to-day basis at the local and regional level. The RWQCBs have the responsibility of granting NPDES permits and setting waste discharge requirements for stormwater runoff from construction sites.

Department of California Highway Patrol. The Department of California Highway Patrol is the primary agency responsible for enforcing the regulations related to the transport of hazardous materials on California roads and highways (Title 13, CCR, §§ 1160-1167).

Hazardous Materials Release Response Plans and Inventory Law. The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act, Health and Safety Code § 25500 et seq.) requires businesses that store or use hazardous materials to prepare a Hazardous Materials Business Plan (HMBP) and submit it to the CUPA. An HMBP includes details of a facility and business conducted at the site, an inventory of hazardous materials that are handled and stored on-site, an emergency response plan, and a safety and emergency response training program for new employees with an annual refresher course.

California Accidental Release Program. Under the California Accidental Release Program (CalARP) regulations, facilities that store extremely hazardous substances or regulated substances above the threshold quantities must register with the CalARP Program and submit a Risk Management Plan (RMP).

Aboveground Petroleum Storage Act Program. The aboveground petroleum storage act (ASPA) program requires tank facilities storing greater than 1,320 gallons of petroleum to develop and implement the SPCC Plan requirements (CFR 2023). A tank facility is any tank or tanks that are aboveground, including connected piping, that contain petroleum and are used by an owner or operator at a single location or site, is in secondary containment, and it is used to hold oil. The CUPA regulates businesses storing petroleum in aboveground containers or tanks (California Health & Safety Code, Chapter 6.67, Sections 25270-25270.13).

Local

Fresno County Municipal Code. Fresno County Municipal Code Chapter 8.60 of the Fresno County Municipal Code regulates the construction, maintenance, testing and use of underground tanks used for the storage of hazardous substances and mandates local implementation and enforcement of state laws pursuant to regulations adopted by the State Water Resources Control Board (Fresno County 2023).

Fresno County Municipal Code Section 14.24.180 outlines the notification requirements for known or suspected release of hazardous materials which may result in discharges into stormwater, the storm drain system, or waters of the U.S. (Fresno County 2023).

Fresno County Municipal Code Chapter 15.10 adopts the California Fire Code (CFC) with specific edits for Fresno County. Fresno County Municipal Code Chapter 15.60 is the Sate Responsibility Area Fire Safe Regulation of the County and is necessary in order to provide minimum uniform standards for basic emergency access, perimeter wildfire protection measures, signing and building numbering, private water supply reserves for emergency fire use and vegetation modification. The purpose of Chapter 15.60 is to create a safer environment for citizens within the wildlands of Fresno County, reduce the destruction and damage to structures and resources, and provide defensible space protecting citizens and firefighters (Fresno County 2023).

Fresno County General Plan. The Health and Safety Element of the Fresno County General Plan outlines Fresno County's planning strategies regarding emergency management and response, fire hazards, flood hazards, seismic and geological planning, airport hazards, hazardous materials and noise (Fresno County 2024). Policies in the Health and Safety Element seek to create an effective emergency response and management system for Fresno County (Fresno County 2024). The following list consists of the policies of the Health and Safety Element relevant to Hazards, Hazardous Materials, and Wildfire:

- Policy HS-B.1: The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.
- Policy HS-B.5: The County shall require development to have adequate access for fire and emergency vehicles and equipment.
- Policy HS-B.8: The County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.
- Policy HS-B.11: The County shall require new development to have water systems that meet County fire flow requirements. Where minimum fire flow is not available to meet County standards, alternate fire protection measures, including sprinkler

systems, shall be identified and may be incorporated into development if approved by appropriate fire protection agency.

- Policy HS-F.1: The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.
- Policy HS-F.2: The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.
- Policy HS-F.3: The County, through its Hazardous Materials Incident Response Plan, shall coordinate and cooperate with emergency response agencies to ensure adequate countywide response to hazardous materials incidents.

Fresno County Environmental Health Department. The Fresno County Environmental Health Department is the designated CUPA for the project. The Hazardous Materials Compliance Program helps prevent costly releases and spills that could endanger the community and damage the environment (Fresno County 2024). The program oversees state-mandated programs in Fresno County, the following are applicable for the project.

Hazardous Materials Business Plan. To satisfy the California Health and Safety Code, Section 25500, et seq., and the related regulations of 19 CCR 2620 et seq., a HMBP would be required to be submitted by the Fresno County Environmental Health Department every year to the California Environmental Reporting System (CERS). The HMBP Program is administered throughout Fresno County and its incorporated cities and is used to protect public health, the environment and groundwater from risks or adverse effects associated with the improper storage and handling of hazardous materials.

Fresno County Multi-Jurisdictional Hazard Mitigation Plan. The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Fresno County and the other participating jurisdictions developed this multi-jurisdictional hazard mitigation plan to make the County and its residents less vulnerable to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 so that Fresno County would be eligible for the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance Grants, including Pre-Disaster Mitigation and Hazard Mitigation Grant programs as well as lower flood insurance premiums (in jurisdictions that participate in the National Flood Insurance Program's Community Rating System) (Fresno County 2018).

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed Project, cause its effect(s) on hazards, hazardous materials/waste, and wildfire to be potentially significant. A master list of cumulative projects located within the study area is provided in **Appendix A, Table A-1 and Figure A-1**.

The geographic extent for the analysis of cumulative impacts related to hazards, hazardous materials, and hazardous waste is limited to the immediate vicinity surrounding the project as the project hazards, hazardous materials, and hazardous waste impacts are limited to the project site and immediately adjacent areas. Similar impacts of other past, present, and reasonably foreseeable future projects that would have the potential to occur would also be limited to their respective project sites and immediately adjacent properties. The closest projects in the cumulative scenario are projects 25, 27 and 28. These three cumulative projects are all near the PG&E downstream network upgrades.

The area for cumulative impacts related to wildfire is related to areas that are in or near an SRA or lands classified as a very high FHSZ, or on land classified by the CPUC as having a fire threat. A review of the cumulative projects identified projects 6, 24, and 25 that meet the above criteria.

5.7.2 Environmental Impacts

HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRE	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code, section 65962.5 and,	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRE	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
as a result, would it create a significant hazard to the public or the environment?				
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
i. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental checklist established by CCR, tit. 14, Div. 6, Ch. 3, Appendix G, hazards and hazardous materials and wildfire.

5.7.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Hazards, Hazardous Materials, and Hazardous Waste. The hazardous materials analyzed include those potentially existing on the site and those that would be used as part of project construction, and operations and maintenance. Potential existing hazards were assessed based on review of information online and in state hazard databases and maps for the project area including:

- State Water Resources Control Board (SWRCB) GeoTracker.
- DTSC EnviroStor (DTSC 2024).
- List of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit (Cal EPA 2024b).
- List of “active” Cease and Desist Orders and Cleanup Abatement Orders.
- Fresno County Multi-Jurisdictional Hazard Mitigation Plan.
- The hazardous materials section analysis for the Darden Clean Energy Project (DCEP) Application (RCI 2023o).

Some hazardous materials would be used on a short-term basis during construction and decommissioning. Others would be stored onsite for use during operations and maintenance. Therefore, this analysis examines the choice and amount of chemicals to be used, how the project would use the chemicals, how they would be transported to the facility, and how the project plans to store the materials onsite.

The project is required to provide documentation of the nature of any existing or future releases of hazardous materials that would become hazardous waste from construction or operation. Potential or existing releases or contamination would be influenced by site specific factors including, but not limited to, the concentration of the contaminant in question, the proposed use of the contaminated area, and any potential pathways for worker and general public exposure.

Wildfire. Data on fire hazard potential in the project area and area wildfire history are used to help determine the potential for damaging impacts to occur as a result of a project-caused wildfire or project impacts on existing wildfire.

Additionally, fire suppression information in the project description, and the availability and proximity of water sources for fire containment and suppression were included in the assessment.

To identify and assess potential impacts related to wildfire staff reviewed publicly available information, including the following:

- CAL FIRE – Fire Hazard Severity Zones Maps.
- CAL FIRE – Historical Fire Perimeters Webmap.
- Fresno County – Multi-Jurisdictional Hazard Mitigation Plan.

- Wildfire section analysis for the DCEP Application (RCI 2024I).
- CPUC – High Fire-Threat District Map zones.
- Fire and Resource Assessment Program (FRAP) – fire perimeter GIS data set.

Thresholds of Significance

A threshold of significance is the line at which a project's environmental impact becomes severe enough that mitigation is required to reduce that impact below the significance line. Impact categories based on the CEQA Environmental Checklist, Appendix G, of the CEQA Guidelines are considered to evaluate if the relevant project impacts are to a degree requiring mitigation.

A threshold of significance may be an identifiable quantitative, qualitative or performance level of a particular environmental effect, and the non-compliance there with means the effect will normally be determined to be significant by the agency.

5.7.2.2 Direct and Indirect Impacts

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or hazardous waste?

Construction– Less Than Significant with Mitigation Incorporated

Based on the analysis below, impacts associated with the routine transport, use, or disposal of hazardous materials/waste during construction would be less than significant with the implementation of **HAZ-3**, **HAZ-4**, and **MM HAZ-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction would involve the use of hazardous materials, as identified in **Table 5.7-1** and elaborated upon in **Table 5.7-2**, **Table 5.7-3**, and **Table 5.7-4**. Hazardous materials used and stored on-site during construction would be securely stored in appropriate containers in compliance with 40 CFR Part 262, 40 CFR 1910.12, and 8 CCR § 5192. Temporary containment berms and spill kits would also be used to help contain any spills during the construction of the project. These areas would be inspected weekly (RCI 2023o).

Hazardous materials would be transported on an intermittent basis to the site as needed by construction. Transportation of hazardous substances would occur with DOT-approved personnel and trucking/transport equipment.

Hazardous waste would be generated during construction of the project. Construction-related hazardous wastes may include waste paint, spent solvents, waste cleaners, waste oil, oily rags, spent batteries, excavation dewatering water, flushing and cleaning fluids, and welding materials.

The project owner would have to obtain a site-specific EPA identification number and hazardous waste generator classification for the project. Hazardous waste generated at the project site would be stored on-site in accordance with accumulation time limits detailed in Title 22, CCR, section 66262.34 before off-site disposal, treatment, or recycling. Staff proposes Condition of Certification (COC) **HAZ-3** to ensure that the project has obtained the project's EPA identification number before the start of construction, reports the number to the Compliance Project Manager (CPM), and notifies the CPM of new or revised numbers.

Hazardous wastes would be accumulated according to Title 22 CCR requirements for satellite waste accumulation. They would be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas would be sized to hold the full contents of the largest single container and, if outdoors and not roofed, would be sized for an additional volume for the rainfall associated with a 25-year, 24-hour storm event. If indoors, the containment would be sized for an additional volume equivalent to 20 minutes of the design flow of any fire protection water. These areas would be inspected weekly.

Hazardous wastes would be collected by a licensed hazardous waste hauler using a hazardous waste manifest. Wastes would be transported to authorized hazardous waste management facilities. Copies of manifests, reports, waste analyses, and other documents would be kept on-site and would remain accessible for inspection for at least 3 years. Employees would be trained in hazardous waste procedures, spill contingencies, and waste minimization. Contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste. Procedures would be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials would be used instead of hazardous materials whenever practical, and wastes would be recycled whenever practical. Handling of hazardous wastes in this way would minimize the quantity of waste deposited into landfills: waste lubricating oil would be recovered and recycled by a waste oil recycling contractor and spent oil filters and oily rags would be recycled. Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Recycling would be in accordance with applicable California state requirements. Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. Other compostable materials, such as vegetation, may also be composted off-site.

Hazardous waste would be stored on-site for less than 90 days and transported by a licensed hazardous waste transporter to an authorized treatment, storage, and disposal facility. (RCI 2023o). Hazardous wastes would likely be sent to the California Class I landfills Kettleman Hills Facility and/or Clean Harbors Buttonwillow Landfill or an out-of-state landfill.

The application indicates a security plan would be prepared and implemented for the project, but the security plan details were minimal. The application included a mitigation measure for a private security system with which local law enforcement could integrate and coordinate (RCI 2024vv). The system would have active surveillance on-site or remote. Also, the application indicated that the O&M building would house security monitoring equipment including camera feeds. Staff concurs that the above referenced security elements are needed to ensure the protection of California's electrical infrastructure from vandalism or domestic/foreign attacks. The application does not include a comprehensive security plan for the project. Therefore, staff proposes COC **HAZ-4** to require the project owner to create an approved construction security plan to ensure a minimum level of security for the solar facility, BESS, step-up substation, O&M facility, and generation-intertie line. With implementation of COC **HAZ-3** and **HAZ-4**, and the SPCC Plan, which would be required, the impact for construction of the solar facility components would be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of the utility switchyard would involve the on-site storage of relatively small quantities of hazardous materials (RCI 2023o). These hazardous materials would be limited to gasoline, diesel fuel, propane, motor oil, coolant, and hydraulic fluid. Similar types and smaller quantities of hazardous materials would be anticipated for the construction of the downstream network upgrades. No regulated substances, as defined by California's Health and Safety Code, Section 25531, would be used during construction of the utility switchyard or downstream network upgrades (RCI 2023o). During construction, hazardous materials would be transported solely during delivery and removal from the project site, on an intermittent basis as needed by construction. Transportation of hazardous substances would occur with DOT approved personnel and trucking/transport equipment.

The contractors of the PG&E utility switchyard and downstream network upgrades would be required to comply with PG&E construction measures. PG&E would implement standard construction measures as identified in Data Request Response Set 4 (RCI 2024u, pp. 46 through 52) which includes hazardous materials management as follows:

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.”

To assure implementation of comprehensive hazardous materials/waste procedures, staff proposes **MM HAZ-1** requiring PG&E to prepare a Hazardous Materials Management Plan prior to construction. With implementation of **MM HAZ-1**, the PG&E utility switchyard and PG&E downstream upgrades would have a less than significant impact involving the routine transport, use, or disposal of hazardous materials.

Operation— Less Than Significant Impact with Mitigation Incorporated

Based on the analysis below, impacts associated with the routine transport, use, and disposal of hazardous materials/waste during project operation would be less than significant with the implementation of **HAZ-1**, **HAZ-2**, and **HAZ-5**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation would involve the use of hazardous materials, as identified in **Table 5.7-1** and elaborated upon in **Table 5.7-2**, **Table 5.7-3**, and **Table 5.7-4**. Hazardous materials used and stored on-site during operation would be securely stored in

appropriate containers in compliance with 40 CFR Part 262, 40 CFR 1910.12, and 8 CCR § 5192.

Hazardous materials would be transported to the site as needed by operations. Transportation of hazardous substances would occur with DOT-approved personnel and trucking/transport equipment.

Project operation and maintenance activities would transport, use, and store a variety of hazardous materials. **Table 5.7-1** presents the hazardous materials that would likely be used and stored on the project and their anticipated uses. The project site would prepare the HMBP prior to operation based on the hazardous materials for each respective location. The preparation of the HMBP would list the hazardous materials and their location which ensures that first responders are prepared to respond to any incidents that could occur at the project site. The SPCC would lay out the proper procedures to help prevent a discharge of petroleum products, as well as control a discharge should one occur at the project site. Therefore, staff proposes COC **HAZ-1** which would require the submission of the HMBP and SPCC for the project site to the Fresno County HazMat Compliance Program, CUPA for the project area, for review and comment and to the CPM for review and approval.

There is the potential for the project to increase the quantities or change the types of hazardous materials that are used at the project site. New or increased amounts of hazardous materials could require new LORS requirements for the project site. Therefore, staff proposes COC **HAZ-2** which would require the project owner to notify and seek approval from the CPM before changing the quantity of or using a new hazardous material onsite. This would ensure that any new or the change in the amount of a hazardous material introduced to the project site would comply with applicable LORS.

As indicated under the construction phase discussion above, the application indicates a security plan would be prepared. Staff concurs that security elements are needed to ensure the protection of California's electrical infrastructure from vandalism or domestic/foreign attacks. Therefore, staff proposes COC **HAZ-5** which would require the project owner to create an operations security plan to ensure a minimum level of security for the project.

With the implementation of COCs **HAZ-1**, **HAZ-2**, and **HAZ-5**, the impacts of operation of the solar facility would be reduced to less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

Operation and maintenance activities of the PG&E utility switchyard and PG&E downstream network upgrades would involve very limited transport, use and storage of hazardous materials. **Table 5.7-1** identifies only hydraulic fluids, mineral oil, and sulfur hexafluoride for use at the utility switchyard. No hazardous materials are identified for the downstream network upgrades. Prior to operation, the switchyard would be

required to prepare the HMBP for approval by Fresno County HazMat Compliance Program per **MM HAZ-1**. The HMBP would list the hazardous materials and their location which ensures that first responders are prepared to respond to any incidents that could occur at the project site or the switching station. With the large quantities of hydraulic fluids and mineral oil at the switchyard, the utility switchyard would also be required to have a SPCC. The SPCC would lay out the proper procedures to help prevent a discharge of petroleum products, as well as control a discharge should one occur at the utility switchyard. Given PG&E's statewide experience operating substations and switchyards and transmission infrastructure, the operation and maintenance would have a less-than-significant impact involving the routine transport, use, or disposal of hazardous materials and hazardous waste.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, project construction would not create a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment with implementation of **WORKER SAFETY-1**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

As discussed above in criterion "a", project construction activities would involve the transportation, use and storage of hazardous materials at the project site. Several hazardous materials would be used in construction activities. Potentially, the improper use and storage of hazardous materials could lead to leaks and spills. However, most spills and leaks would be limited and easily cleaned up with spill kits due to the small quantities involved. In addition, hazardous materials would use temporary secondary containment to lower the risk of a release to the environment.

Staff reviewed the project details for storage, collection, disposal and waste minimization during construction and operation, which are listed above in criterion "a" that would be developed to reduce the potential for incidents involving hazardous materials and concluded that implementation would be adequate to ensure that hazardous materials handling would comply with applicable LORS (RCI 2023cc, pp. 5.11-12 – 5.11-13). Therefore, hazardous materials would be stored, used, and cleaned up in compliance with LORS. Additionally, staff proposed COCs **HAZ-3** requiring EPA hazardous waste ID number, and **WORKER SAFETY-1** would include construction worker health and safety programs and procedures to protect workers from exposure to hazardous materials and waste. For more information refer to **Section 4.4, Worker Safety and Fire Protection**.

PG&E Utility Switchyard and PG&E Downstream Network Upgrades

The contractors of the PG&E utility switchyard and downstream network upgrades would be required to comply with PG&E construction measures and preparation and approval of a Hazardous Materials Management Plan per **MM HAZ-1**. Therefore, hazardous materials would be stored, used, and cleaned up in compliance with LORS, which would reduce the potential for foreseeable upset and accident conditions. The PG&E standard construction measures also include fire risk management protocols (RCI 2024u, p. 51) that would reduce the potential for fires during construction and reduce the potential for any upset or accident conditions to occur.

Operation— Less Than Significant with Mitigation Incorporated

Based on the analysis below, project operation would not create a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment with implementation of **WORKER SAFETY-2, WORKER SAFETY-7, WORKER SAFETY-8** and **HAZ-9**.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The BESS would have the potential for upset and accident conditions due to the large volume of lithium-ion batteries that could create the risk of fire due to the thermal runaway potential. Thermal runaway is a process in which the lithium-ion cell enters an uncontrollable, self-heating state and can emit toxic gases such as hydrogen chloride, hydrogen fluoride, hydrogen cyanide, and benzene along with flammable/explosive gases including hydrogen, methane, propane, ethylene, and others. These flammable gases could potentially lead to an explosion within the BESS container. Due to the potential for fire and explosion, staff concludes that the project's BESS would present a significant risk that should be mitigated. Therefore, staff recommends the adoption of several Worker Safety COCs that would reduce the risk of fire to less than significant.

For example, pursuant to **WORKER SAFETY-7**, the project owner would be required to install remote fire or heat sensors at sufficient locations to cover the entire BESS facility; establish an annual joint training program with the Fresno County Fire Protection District that includes table-top exercises for a BESS fire; and prepare and submit a Root Cause analysis of any incident at the BESS facility to the CPM among several other requirements. **WORKER SAFETY-8** requires the project to use a BESS that is National Fire Protection Association (NFPA) 855 Code compliant. NFPA 855 are industrial guideline standards for the installation of stationary energy storage systems, which would improve the safety of the BESS. **WORKER SAFETY-9** requires the project be built to NFPA 850 standard. NFPA 850 requires the development of a Fire Protection Design Basis Document that identifies relevant hazards such as the presence of fuels, lubricating oils, flammable liquids, and electrical equipment. The BESS also includes built-in failsafe and cooling systems designed to prevent thermal runaway and the spread of fire, in the rare scenario that an accidental fire occurs. Staff's full analysis of

thermal runaway and fire prevention can be found in **Section 4.4, Worker Safety and Fire Protection**.

However, in the rare case of a thermal runaway or fire incident at a BESS, there could be smoke that could last for many hours, even if the accident is limited to a single container. Water would be available for the Fresno County Fire Protection District (FCFPD) to use to potentially cool the surrounding containers or could be used on the container on fire at the discretion of the FCFPD. Several BESS fire incidents have occurred at installations where the water and air were required to be sampled to ensure the safety of the public. This real time information would be important for first responders to have to determine if a shelter in place or evacuation order would be necessary. To date, the water and air sampling conducted at other BESS fire incidents has found that the constituents did not pose a concern to the public (NYSERDA 2023). However, staff has determined that having this real time information could be critical for first responders such as the FCFPD during an incident. Therefore, staff proposes COC **HAZ-9** that would require an air and water sampling plan. COC **HAZ-9** would require the project owner to develop an air sampling plan to ensure that information can be relayed to first responders in a timely manner. Additionally, water quality testing would be conducted prior to any disposal of water used for an incident.

As discussed above in criterion "a", project operation and maintenance activities would also involve the transportation, use and storage of hazardous materials at the project site using the same procedures.

Staff reviewed the project details for storage, collection, disposal and waste minimization during operation, which are listed above in criterion "a" that would be developed to reduce the potential for incidents involving hazardous materials and concluded that implementation would be adequate to ensure that hazardous materials handling would comply with applicable LORS (RCI 2023cc, pp. 5.11-12 – 5.11-13). Therefore, with the implementation of COCs **HAZ-3** and **Worker Safety-1**, hazardous materials would be stored, used, and cleaned up in compliance with LORS. Additionally, staff proposed COC **WORKER SAFETY-2** would include operation worker safety programs and procedures to protect workers from exposure to hazardous materials and waste. For more information refer to **Section 4.4 Worker Safety and Fire Protection**. With the implementation of **WORKER SAFETY-2**, **WORKER SAFETY-7**, **WORKER SAFETY-8** and **HAZ-9**, and the distance separating the BESS facility from the public, the potential for and impact of a BESS accidental release of hazardous materials affecting the public would be reduced to a less than significant impact.

PG&E Utility Switchyard and Downstream Network Upgrades

Operations and maintenance activities would have limited hazardous materials used and stored at the PG&E utility switchyard and no hazardous materials stored at the downstream network upgrades. Therefore, operation of the PG&E utility switchyard and downstream network upgrades would have a less than significant impact involving the accidental release of hazardous materials.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction and Operation— *No Impact*

Based on the analysis below, project construction and operation would not result in hazardous materials impacts to existing or proposed schools.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

There are no schools located or proposed within one-quarter mile of the solar facility, BESS, step-up substation, O&M facility, and generation-intertie line. In addition, no acutely hazardous materials (as listed in 8 CCR § 5189 Appendix A) would be used during project construction and operations.

PG&E Utility Switchyard and PG&E Downstream Network Upgrades

There are no schools located or proposed within one-quarter mile of the proposed PG&E facilities. In addition, no acutely hazardous materials would be used during project construction and operation.

d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code, section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction and Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, project construction or operation would not be on a listed hazardous materials site. To mitigate the potential impacts from unknown environmental contamination, staff proposes COCs **HAZ-6, HAZ-7, and HAZ-8** to require a Soils Management Plan (SMP) and a professional engineer or geologist be available for consultation if contamination is discovered during ground disturbing activities.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The DTSC and SWRCB compile and update lists of hazardous material sites pursuant to Government Code § 65962.5. The project site is not included on the databases maintained by the DTSC's Envirostor (DTSC 2024) or the SWRCB's Geotracker (SWRCB 2024) as the location of any hazardous material sites. Further examination using the DTSC's and SWRCB's databases show that there are no hazardous material sites on the Cortese list within 1,000 feet of these project components (Cal EPA 2024a).

Unknown Environmental Contamination. The applicant included a SMP as Appendix O (Rincon 2023f) in the application. The purpose of the SMP would be to provide procedures and protocols for the proper management of unknown impacts to soil or undocumented subsurface features potentially encountered at the project site during grading and construction activities. The information provided in the SMP would be used to address proper handling, assessment, and disposal of any impacted soil or subsurface features that are encountered during grading. Soil that would be transported offsite must be adequately characterized and disposed of at a facility that is permitted and approved by the disposal contractor to receive such material. Likewise, any soil imported to the property must be either from a virgin quarry or certified as determined by analysis to be “clean” in accordance with applicable state LORS prior to arriving at the project site. Staff concurs that that ground disturbing activities would have the potential to encounter impacted groundwater and/or soil. Therefore, staff proposes HAZ-6 which would require the submission of a SMP to the Fresno County CUPA, for review and comment, and to the CPM for review and approval prior to the start of any ground disturbing activities. This would ensure that the project complies with the proposed SMP in their application.

A professional engineer or professional geologist with sufficient experience in hazardous waste management would have the requisite expertise to determine whether additional investigations are needed to identify the extent of contamination and to ensure proper handling and disposal contaminated soil and groundwater. Therefore, staff proposes **HAZ-7** which would require that an experienced and qualified professional engineer or professional geologist would be available for consultation if contamination is discovered during ground disturbing activities. The resume of the professional engineer or professional geologist shall reflect experience in remedial investigations and feasibility studies. Staff proposes **HAZ-8** requiring the professional engineer or geologist to inspect the site, determine what would be required to characterize the nature and extent of contamination, and provide a report to representatives of the Fresno County HazMat Compliance Program and the CPM on findings and the recommended course of action. Related activities would specifically include soil removal, dust suppression, and worker exposure prevention by means of wearing personal protective equipment. Any contaminated soils and/or groundwater identified would be removed and disposed of according to the appropriate local, state, and federal regulations under the oversight of the agency taking lead jurisdiction.

Any contaminated soils and/or groundwater identified would be removed and disposed of according to the appropriate local, state, and federal regulations under the oversight of the CEC. Staff proposes COCs **HAZ-6, HAZ-7, and HAZ-8** for construction activities to ensure that any impacts from unknown environmental contamination would be less than significant.

PG&E Utility Switchyard and PG&E Downstream Network Upgrades

The DTSC and SWRCB compile and update lists of hazardous material sites pursuant to Government Code § 65962.5. The PG&E Utility Switchyard and the three scenarios of

PG&E Downstream Network Upgrades are not included on the databases maintained by the DTSC's Envirostor (DTSC 2024) or the SWRCB's Geotracker (SWRCB 2024) as the location of any hazardous material sites. Further examination using the DTSC's and SWRCB's databases show that there are no hazardous material sites on the Cortese list within 1,000 feet of these PG&E project components (Cal EPA 2024a).

Unknown Environmental Contamination. In the case of encountering unknown environmental contamination, PG&E would comply with the Hazardous-Substance Control and Emergency Response procedures in the PG&E Construction Measures (RCI 2024u) discussed in criterion "a".

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 would be tested, and if contaminated above hazardous waste levels, would be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil would require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations, as required by **MM HAZ-1** the Hazardous Materials Management Plan.

PG&E standard measures would reduce the impact of unknown contamination to a less than significant impact.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction and Operation— *No Impact*

Based on the analysis below, project construction and operation would not result in excessive noise levels or safety hazards to public or private airports.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility and Generation-Intertie Line

There are no public or private airports within two miles of the project. The nearest airport is the San Joaquin Airport which is more than five miles to the north and northeast of the project site. Given the distance to the San Joaquin Airport, on-site construction workers or maintenance staff would not be exposed to airport excessive noise levels or safety hazards. The project is also not within any airport land use plan.

PG&E Utility Switchyard and PG&E Downstream Network Upgrades

There are no public or private airports within two miles of the PG&E Utility Switchyard and three scenarios of PG&E Downstream Network Upgrades. The nearest airport is the San Joaquin Airport which is approximately 14 miles to the north and northeast. Given

the distance to the San Joaquin Airport, on-site construction workers or maintenance staff would not be exposed to airport excessive noise levels or safety hazards. The project is also not within any airport land use plan. Therefore, no impact would occur.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction and Operation– *No Impact*

Based on the analysis below, project construction and operation would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The Fresno County Multi-Jurisdictional Hazard Mitigation Plan does not specifically map emergency evacuation or access routes (Fresno County 2018). The project site is not within an area designated as emergency access routes for any community. W Kamm Ave lies north of the solar facility and BESS, and W Mount Whitney Ave lies south, allowing egress/ingress in the event of an emergency. The project would comply with all of the safety practices described within the Fresno County Multi-Jurisdictional Hazard Mitigation Plan which was developed to reduce or eliminate long-term risk to people and property from hazards (Fresno County 2018). Therefore, the solar facility components would have no impact.

PG&E Utility Switchyard and Downstream Network Upgrades

The Fresno County Multi-Jurisdictional Hazard Mitigation Plan does not specifically map emergency evacuation or access routes (Fresno County 2018). Site access would be provided to the PG&E utility switchyard from South Derrick Avenue west of I-5. South Derrick Avenue is not an emergency access route to any community but would allow egress/ingress in the event of an emergency. Existing improved or unimproved access roads would provide access to the downstream network upgrades for operational inspection and maintenance. The downstream network upgrades are located in remote areas that do not serve as critical through-routes for emergency management, and would not have on-site operational staff, further reducing the likelihood of interference with emergency response or evacuation efforts. The project would comply with all of the safety practices described within the Fresno County Multi-Jurisdictional Hazard Mitigation Plan which was developed to reduce or eliminate long-term risk to people and property from hazards (Fresno County 2018). Therefore, the PG&E components would have no impact.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Construction and Operation— *Less Than Significant Impact with Mitigation Incorporated*

Based on the analysis below, with the implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**, and **MM HAZ-2**, the project construction and operation would not expose people or structures to significant risks from wildfires.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The westernmost components of the project, including generation-intertie line west of I-5 are within an SRA, on a parcel that is in a Moderate and High FHSZ, adjacent to the perimeter of historic wildfires. The remainder of the project site and generation-intertie line are not within an SRA or FHSZ, and the solar facility, step-up substation, BESS, and O&M Facility locations are more than eight miles east of the nearest SRA or FHSZ (CAL FIRE 2023, CAL FIRE 2024).

The project site is not populated and is vegetated with active and non-active agriculture in a largely flat region with no forested areas in the vicinity. Agricultural access roads and local roadways provide non-flammable fire breaks and vehicular access between parcels. There would be a temporary increase in human activity and potential ignition sources, including equipment that could create a spark, be a source of heat, or leak flammable materials on the project site during construction and operation (RCI 2023l). The predominant fire hazard from project construction would involve the use of vehicles and equipment, which could ignite dry vegetation and result in a fire, particularly during the drier, warmer conditions of summer and fall. Construction activities that could result in sparks such as welding or grading have a greater potential to result in an ignition (RCI 2023l).

The project owner proposes to prepare and implement a Construction Fire Protection and Prevention Program which would further reduce construction-related risks of wildfire ignition by providing fire protections, identifying known fire hazards, and outlining procedures for fire safeguards for project construction activities (RCI 2023l). Therefore, staff proposes COC **WORKER SAFETY-1** to require the project owner to implement a Construction Fire Prevention Plan.

Additionally, the project owner proposes to prepare and implement an O&M Fire Protection and Prevention Program which would further reduce operations-related risks of wildfire ignition by providing fire protections, identifying known fire hazards, and outlining procedures for fire safeguards for project O&M activities. The project owner would coordinate with the local fire department and follow all applicable detection and suppression requirements in the local California Fire Code (RCI 2023l, RCI 2023k). Staff

proposes COC **WORKER SAFETY-2** which would require the project owner to implement an O&M Fire Protection and Prevention Plan.

To further ensure timely implementation of construction and operation comprehensive fire prevention and protection measures, staff proposed COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**. For further discussion, please refer to **Section 4.4, Worker Safety and Fire Protection**. With these COCs, the solar facility project components would have a less than significant impact on hazards from wildland fires.

PG&E Utility Switchyard and Downstream Network Upgrades

The westernmost components of the project, including the PG&E utility switchyard, are on parcels classified as Moderate and High FHSZ. Portions of the distribution pole routes for the PG&E downstream network upgrades for scenario 1 and 2 west of I-5 are within a Moderate FHSZ. Scenario 3 for the PG&E downstream network upgrades is within a moderate fire hazard zone for the section extending from the utility switchyard to the crossing of I-5. The remainder of the Scenario 3 downstream network upgrades is not within an SRA or FHSZ (CAL FIRE 2023).

As discussed above, the fire risk is higher in the westernmost area where the PG&E facilities are located. The westernmost components of the project, including generation-intertie line west of I-5 are within an SRA, on a parcel that is in a Moderate and High FHSZ.

Construction would implement PG&E standard construction measures for fire risk management (RCI 2024u, p. 51) as shown below:

"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."

The utility switchyard would be designed to include protection and control systems that would disconnect power to faulted equipment to remove electrical energy from propagating damage, thereby reducing wildfire risk (RCI 2023l).

Upon completion of the utility switchyard, ownership and operations of the facility would be transferred to PG&E. In compliance with California Senate Bill 901, Assembly

Bill 1054 and guidelines from the Office of Energy Infrastructure Safety, PG&E has prepared and implemented its 2023-2025 Wildfire Mitigation Plan (WMP) (RCI 2023I). The 2023-2025 WMP addresses PG&E's wildfire safety programs and initiatives focused on reducing the potential for catastrophic wildfires related to electrical equipment, reducing the potential for fires to spread, and containing the customer impact of Enhanced Powerline Safety Settings and Public Safety Power Shutoff events (RCI 2023I). Any fire protection or prevention programs for switchyard operations would be the responsibility of the utility (RCI 2023I). The Office of Energy Safety was established on July 1, 2021 to ensure electrical utilities are taking effective actions to reduce utility-related wildfire risk.

Due to the location of the PG&E utility switchyard and downstream network upgrades and PG&E wildfire mitigation measures in the 2023-2025 WMP, and **MM HAZ-2**, the PG&E components would have a less than significant impact during construction and operation on hazards from wildfires.

h. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

i. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction and Operation— *No Impact*

Based on the analysis for criterion "f", above, project construction and operation would not substantially impair an adopted emergency response plan or emergency evacuation plan. The Fresno County Multi-Jurisdictional Hazard Mitigation Plan does not specifically map emergency evacuation or access routes, so the project would not impair any emergency evacuation or access routes.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

See discussion in criterion "f" above.

PG&E Utility Switchyard and PG&E Downstream Network Upgrades

See discussion in criterion "f" above.

ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant

concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, with the implementation **MM HAZ-2** and COCs **WORKER SAFETY-1**, and **WORKER SAFETY-2** and the low potential for wildfire at the project location, the overall impact of wildfire would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

As discussed above in criterion “g” above, the project site is relatively flat and is currently undeveloped and the project owner would implement construction and operation fire prevention plans. The implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** would ensure that construction and operation fire prevention plans would be followed. Additionally, there are no portions of the solar facility, BESS, step-up substation, O&M facility, and generation-intertie line that are within a Very High FHSZ. Also, there is no recent history of wildfires in the area of the solar project (CAL FIRE 2023). Therefore, impacts from the solar facility components would be less than significant with incorporation of COCs.

PG&E Utility Switchyard and Downstream Network Upgrades

The project site is relatively flat and is currently undeveloped and would not substantially exacerbate wildfire risks during project construction and operations. Additionally, there are no portions of the PG&E utility switchyard and PG&E downstream network upgrades that are within a Very High FHSZ. Also, there is a record of only one wildfire near the proposed PG&E facilities and the PG&E utility switchyard was at the eastern edge of that wildfire in 1968. (CAL FIRE 2024). Furthermore, as discussed in criterion “g” PG&E would implement Fire Risk Management procedures and procedures from its 2023-2025 WMP (PG&E 2023) and implement **MM HAZ-2**. Therefore, the PG&E components would have a less than significant impact.

iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Construction and Operation– *Less Than Significant Impact with Mitigation Incorporated*

Based on the analysis below, with the implementation of **MM HAZ-2**, and COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** and the low potential for wildfire at the project location, the project would not exacerbate fire risk and impact of wildfire would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Project related infrastructure including the generation-intertie line would include the installation and/or maintenance of access roads, power lines, and other electrical utilities. As discussed above in criterion “g”, the project site is relatively flat and is currently undeveloped. Agricultural access roads and local roadways provide non-flammable fire breaks and vehicular access between parcels in the area. The project owner would implement construction and operation fire prevention plans. The implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** would ensure that construction and operation fire prevention plans would be followed. Additionally, there are no portions of the solar facility, BESS, step-up substation, O&M facility, and generation-intertie line that are within a Very High FHSZ. Also, there is no recent history of wildfires in the area of the solar facility (CAL FIRE 2023). Therefore, the solar facility components would have a less than significant impact with mitigation.

PG&E Utility Switchyard and Downstream Network Upgrades

Project related infrastructure including the PG&E utility switchyard and PG&E downstream network upgrades would include the installation and/or maintenance of access roads, power lines, and other electrical utilities. This infrastructure could exacerbate fire risk during construction of these components. However, emergency water sources would be installed at the PG&E utility switchyard (RCI 2023I). The availability of emergency water sources would decrease the risk of wildfire. Staff proposed **MM HAZ-2** requiring the preparation and the implementation of a Construction and O&M Fire Protection and Prevention Program that would further reduce construction-related risks of wildfire ignition by providing fire protections, identifying known fire hazards, and outlining procedures for fire safeguards for project construction activities. For operation PG&E would implement safety procedures, as appropriate, from its 2023-2025 WMP and the implementation of **MM HAZ-2**. The WMP includes vegetation management and defensible space inspections for transmission substations and distribution substations in alignment with guidelines (PG&E 2023). Therefore, this impact would be less than significant for the PG&E utility switchyard and the downstream network upgrades.

iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Construction and Operation— *No Impact*

Based on the analysis below, project construction and operation would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The project site would not be on slopes that could expose people or structures to downslope or downstream flooding, landslides, post-fire slope instability or drainage changes in the event of a wildland fire. Therefore, the solar facility components would have no impact on people or structures.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and PG&E downstream network upgrades would not be on slopes that could expose people or structures to downslope or downstream flooding, landslides, post-fire slope instability or drainage changes in the event of a wildland fire. Therefore, the PG&E components would have no impact on people or structures.

5.7.2.3 Cumulative Impacts

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, the project would not result in a cumulatively considerable impact on hazards, hazardous materials/waste and wildfire.

The cumulative effect of hazards such as aviation, emergency evacuation and the transportation, use, and storage of hazardous materials impacts would be limited to the project site and immediately adjacent areas. No cumulative projects were identified at or immediately adjacent to the project, therefore there are no projects with the potential to combine cumulatively with the project relative to Hazards and Hazardous Materials.

The cumulative effect of wildfire would be limited because the project site is not in or near an SRA or lands classified as a very high FHSZ, and not on land classified by the CPUC as having a fire threat. The combined wildfire risk from the project and projects from the cumulative project list would not be cumulatively considerable and thus would have a less than significant impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The cumulative effect of hazards such as the lithium-ion BESS, the transportation, use, and storage of hazardous materials and the generation and haul away of hazardous waste would be limited to the solar facility components and BESS and immediately adjacent areas. No cumulative projects were identified at or immediately adjacent to the solar facility components or BESS, therefore there are no projects from the cumulative list with the potential to combine cumulatively with the solar facility components or BESS relative to hazards, hazardous materials, and hazardous waste.

The cumulative effect of wildfire would be limited because the solar facility components and BESS are not in or near an SRA or lands classified as a very high FHSZ, and not on land classified by the CPUC as having a fire threat. Additionally, no cumulative projects were identified at or immediately adjacent to the project. Therefore, there are no projects from the cumulative list with the potential to combine cumulatively with the solar facility components, and the combined impact would be a less than cumulatively considerable.

PG&E Utility Switchyard and Downstream Network Upgrades

The cumulative effect of the transportation, use, and storage of hazardous materials and the generation and haul away of hazardous waste would be limited to the PG&E selected pathway for the downstream network upgrade and immediately adjacent areas. No cumulative projects were identified near the proposed PG&E utility switchyard. There are three cumulative projects within a mile of downstream network upgrade pathways (see **Figure A-1** in **Appendix A** – projects 25, 27, and 28). The incremental impact of the PG&E downstream network upgrades related to hazardous materials/wastes would be negligible (short, limited construction and infrequent routine maintenance after construction) and would not cumulatively contribute (combine) with the other projects so the impact would not be cumulatively considerable.

The cumulative effect of wildfire would also be limited because the project site is not on lands classified as a very high FHSZ, not on land classified by the CPUC as having a fire threat, and in an area with minimal history of wildfires. With the implementation of standard PG&E inspection measures in its 2023-2025 WFP, the impact of the non-regulatory components (PG&E switchyard and downstream network upgrades) on wildfire would be less than significant. No cumulative projects are close to the proposed PG&E utility switchyard. There are cumulative projects near the three scenarios for the PG&E downstream network upgrades. Given PG&E standard inspections during operation, the downstream network upgrades would have minimal impact on potential wildfires and would not cumulatively contribute (combine) with the other projects, so the impact would not be cumulatively considerable.

5.7.3 Project Conformance with Applicable LORS

Table 5.7-5 details staff's determination of conformance with applicable local, state, and federal LORS to hazards and hazardous materials, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. **Table 5.7-6** details staff's determination of conformance with applicable local, state, and federal LORS to wildfire, including any proposed Conditions of Certification, where applicable to ensure the jurisdictional components would comply with LORS. As shown in both of these tables, staff concludes that with implementation of specific COCs, the project would be consistent with all

applicable LORS. The subsection below, "Staff Proposed Conditions of Certification," contains the full text or the referenced conditions of certification.

TABLE 5.7-5 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE

Applicable LORS	Conformance and Basis for Determination
Federal	
Section 302, EPCRA (Public Law 99-499 42 USC 110222) and Hazardous Chemical Reporting: Community Right-to-Know (40 CFR 370). Requires one-time notification if EHS are stored in excess of TPQs.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. A HMBP would be prepared for the project and submitted to Fresno County Environmental Health – CUPA/HazMat Compliance Program and uploaded to CERS.
Section 304, EPCRA (Public Law 99-499, 42 USC 11002) and Emergency Planning and Notification (40 CFR 355). Requires notification when there is a release of hazardous material in excess of its RQ.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. Any releases of hazardous materials at the project facility in excess of its RQ would follow the notification procedures described in the HMBP.
Hazardous Waste Storage Requirements (40 CFR Part 262). Includes provisions for securing hazardous waste storage areas to prevent unauthorized access and potential release of hazardous materials.	Yes. HAZ-1 requires the owner to prepare the HMBP and SPCC Plan prior to the start of operations. The HMBP would include information regarding the secure storage of hazardous waste and materials. HAZ-5 requires the owner to prepare a site-specific security plan.
Section 311, EPCRA (Public Law 99-499, 42 USC 11021) and Hazardous Chemical Reporting: Community Right-to-Know (40 CFR 370). Requires that SDSs for all hazardous materials or a list of all hazardous materials be submitted to the State Emergency Response Commission Local Emergency Planning Committee (LEPC), and Fresno County Environmental Health – CUPA/HazMat Compliance Program.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would include a list of hazardous materials for submission to the State Emergency Response Commission LEPC and Fresno County Environmental Health – CUPA/HazMat Compliance Program.
Section 313, EPCRA (Public Law 99-499, 42 USC 11023) and Toxic Chemical Release Reporting: Community Right-to-Know (40 CFR 372). Requires annual reporting of releases of hazardous materials.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. Any releases of hazardous materials at the project facility would follow the notification procedures described in the HMBP.
Section 311, CWA (Public Law 92-500, 33 USC 1251 et seq.) and Oil Pollution Prevention (40 CFR 112). Requires preparation of an SPCC plan if the total oil and petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons or if the oil or oil products stored in USTs exceeds 42,000 gallons.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An SPCC plan would be prepared for the project facility if cumulative storage of oil and oil products on-site is greater than 1,320 gallons and/or storage of oil and oil products in USTs is greater than 42,000 gallons.
U.S. Department of Transportation Regulations, 49 CFR 171-177. Governs the transportation of hazardous materials, including the marking of transportation vehicles.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would describe transportation requirements for hazardous materials stored at the project facility.
Hazardous Waste Operations and Emergency Response (49 CFR Section 1910.12). Specifies the operational and emergency response	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would describe

TABLE 5.7-5 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE

Applicable LORS	Conformance and Basis for Determination
requirements related to the use, generations, and storage of hazardous materials.	operational and emergency response requirements related to the use, generation, and secure storage of hazardous materials.
Resource Conservation and Recovery Act (RCRA), Title 42, Chapter 82. Regulates transportation, treatment, storage, and disposal of hazardous waste.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would establish procedures related to the transportation, treatment, storage, and disposal of hazardous waste.
Toxic Substances Control Act (TSCA), Title 15, Chapter 53. The TSCA addresses the production, importation, use, and disposal of specific chemicals, including PCBs.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would establish procedures for the use of hazardous materials including PCBs.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42, Chapter 103. Provides procedures to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. See Impact discussion item b).
State	
CCR, Title 8, Section 339; Section 3200 et seq., Section 5139 et seq. and Section 5160 et seq. Lists hazardous chemicals under the Hazardous Substance Information and Training Act; addresses control of hazardous substances; and addresses hot, flammable, poisonous, corrosive, and irritant substances.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would describe hazardous material handling requirements related to the control of hazardous substances, including hot, flammable, poisonous, corrosive, and irritant substances.
Health and Safety Code, Section 25500 et seq. (HMBP). Requires preparation of an HMBP if hazardous materials are handled or stored in excess of threshold quantities.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An HMBP would be prepared for the project and submitted to Fresno County Environmental Health – CUPA/HazMat Compliance Program and uploaded to CERS.
Health and Safety Code, Section 25270.13 (Aboveground Petroleum Storage Act). Requires preparation of an SPCC plan if oil is stored in a single AST with capacity greater than 660 gallons or if the total petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An SPCC plan would be prepared for the project and implemented if cumulative storage of oil and oil products on-site is greater than 1,320 gallons.
Health and Safety Code, Section 25249.5 through 25249.13 (Safe Drinking Water and Toxics Enforcement Act) (Proposition 65). Requires warning to persons exposed to a list of carcinogenic and reproductive toxins and protection of drinking water from the same toxins.	Yes. The project facility would be appropriately labeled for any chemicals stored onsite that are on the Proposition 65 list.
Health and Safety Code, Section 25100 through 25259. Establishes the procedures for hazardous waste storage, treatment, and transportation.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would include details about the storage and transportation of hazardous materials and waste.

TABLE 5.7-5 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE

Applicable LORS	Conformance and Basis for Determination
CVC Section 32100.5. Establishes the procedures for the state to determine transportation corridors for materials that may pose an inhalation hazard.	Yes. Transportation of sulfuric acid would follow designated routes.
CVC Section 32000 – 32053. Regulates the transportation of hazardous materials, including licensing and notification of hauling routes.	Yes. Transportation of hazardous materials to and from the project facility would follow all licensing and notification requirements.
Health and Safety Code, Section 25280 through 25299 (Underground Storage of Hazardous Substances). Regulates the construction, maintenance, testing, and use of USTs for the storage of hazardous Substances.	Yes. The project facility is not expected to have any USTs therefore a UST monitoring plan is not required for the facility.
CCR, Title 24 (California Fire Code). Requires the preparation of a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) or an HMBP that includes the required information.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project facility would prepare an HMBP that would include details that satisfy the requirements of the HMMP and HMIS.
CCR, Title 22 (Hazardous Waste Management). Establishes standards applicable to generators and transporters of hazardous waste.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would include details regarding hazardous waste generation and transportation. Includes manifest recordkeeping requirements.
Health and Safety Code, Hazardous Materials Release Response Plans and Inventory Law, Division 20, Chapter 6.95. Regulates the release or accidental release of hazardous materials.	Yes. See impact criterion "b".
Local	
Fresno County Municipal Code Section 8.60. Regulates the construction, maintenance, testing, and use of USTs for the storage of hazardous substances	Yes. The project facility is not expected to have any USTs therefore a UST monitoring plan is not required for the facility.
Fresno County Municipal Code Section 14.24.180. Notification requirements for known or suspected release of hazardous materials which may result in discharges into stormwater.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would include procedures for notification if there is a known or suspected release of a hazardous substance which may result in discharges into stormwater.
Fresno County General Plan Policy HS-F.1. Requires facilities that handle hazardous materials or wastes to be designed, constructed, and operated in accordance with all applicable laws and regulations.	Yes. The project would comply with all local, state, and federal regulations for hazardous materials handling, storage, and transportation.

TABLE 5.7-6 CONFORMANCE WITH LORS APPLICABLE TO WILDFIRE

Applicable LORS	Conformance and Basis for Determination
State	
CCR 8 CCR § 1920, et seq. Regulations for fire protection systems.	Yes. A Fire Prevention Plan would be required by COCs WORKER SAFETY-1 & WORKER SAFETY-2.
Requirements for fire protection. 8 CCR § 6150, et seq.; § 6151, et seq.; § 6165, et seq.; § 6170, et seq.; § 6175, et seq.; § 6183, et seq.; § 6184, et seq.	Yes. A Fire Prevention Plan would be required by COCs WORKER SAFETY-1 & WORKER SAFETY-2.
CCR, Title 24 (California Fire Code). Establishes best practices for fire safety and prevention. Requires the preparation of a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) or an HMBP that includes the required information.	Yes. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project facility would prepare an HMBP that would include details that satisfy the requirements of the HMMP and HMIS.
CCR, Title 24 Chapter 1207. Outlines requirements for design, construction, operation, and decommissioning standards; permits, construction documents, hazard mitigation analysis, and fire testing, suppression, and remediation for stationary and mobile electrical energy storage systems.	Yes. COCs WORKER SAFETY-8 & WORKER SAFETY-9 require the project owner to comply with the applicable provisions of NFPA 855 (standard for the Installation of Stationary Energy Storage Systems) as a minimum level of safety for the BESS. Also, NFPA 850 – recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, as the minimum level of fire protection. The BESS would be designed to comply with the requirements set forth in CCR Title 24, Chapter 1207.
California Public Resource Code Section 4427 Section 4428 Section 4431. Outlines fire safety and wildfire protection standards in conjunction with building, construction, and development in SRAs.	Yes. A Fire Prevention Plan would be required by COCs WORKER SAFETY-1 & WORKER SAFETY-2. The project would include preparation and implementation of a Fire Prevention Plan during construction and O&M activities that would be consistent with these General Plan policies.
Local	
Fresno County General Plan Policy HS-B.1 Policy HS-B.5 Policy HS-B.8 Policy HS-B.11. Outlines policies, standards, and programs related to fire hazards.	Yes. A Fire Prevention Plan would be required by COCs WORKER SAFETY-1 & WORKER SAFETY-2. The Fire Prevention Plan would be consistent with these General Plan policies.
Fresno County Code of Ordinances Section 15.10. Adopts the California Fire Code.	Yes. The project would be consistent with the requirements set forth in the Fresno County Municipal Code Section 15.10.
Fresno County Code of Ordinances Section 15.60. State Responsibility Area Fire Safe Regulations of the County, provides minimum uniform standards for basic emergency access, perimeter wildfire protection measures, signing and building numbering, private water supply reserves for emergency fire use and vegetation modification.	Yes. The project would be consistent with the requirements set forth in the Fresno County Municipal Code Section 15.60.

5.7.4 Conclusions and Recommendations

As discussed above, with implementation of conditions of certification, the project would have a less than significant impact related to hazards, hazardous materials/waste, and wildfire and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.7.5 Proposed Conditions of Certification" below.

5.7.5 Proposed Conditions of Certification

The following proposed COCs include measures to both mitigate environmental impacts and ensure conformance with applicable LORS. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facility.

HAZ-1 The project owner shall prepare a Hazardous Materials Business Plan (HMBP) and a Spill Prevention Control and Countermeasure (SPCC) Plan and provide these plans to Fresno County HazMat Compliance Program for review and comment and to the Compliance Project Manager (CPM) for review and approval.

Verification: At least 60 days prior to the start of operation the project owner shall prepare and submit the HMBP and SPCC Plan to the Fresno County HazMat Compliance Program for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the Fresno County HazMat Compliance Program requesting review and comment.

At least 30 days prior to the start of operation, the project owner shall provide copies of any comment letters received from the Fresno County HazMat Compliance Program along with any changes to the HMBP and SPCC plans for CPM review and approval. After CPM review and approval, the project owner shall provide complete copies of the final HMBP and SPCC to the Fresno County HazMat Compliance Program, sending copies of the correspondence to the CPM.

HAZ-2 After the start of project operation, the project owner shall not use or change the quantity of hazardous materials that would require a change in the project's HMBP unless approved in advance by the CPM.

Verification: At least 30 days prior to changing the quantity of or using a new hazardous material onsite, the project owner shall notify and seek approval from the CPM. The project owner shall provide to the CPM, in the Annual Compliance Report, the HMBP's list of hazardous materials and quantities contained at the facility.

HAZ-3 The project owner shall report new or temporary hazardous waste generator identification numbers from the EPA prior to generating any hazardous waste during demolition, construction, or operations.

Verification: The project owner shall keep a copy of the identification number(s) on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once, unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to EPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM 30 days before the change occurs.

HAZ-4 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval.

The Construction Site Security Plan shall include the following:

1. perimeter security consisting of fencing enclosing the construction area;
2. security guards during hours when construction personnel are not present at the site;
3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
5. protocol for contacting law enforcement and the CPM in the event of suspicious activity, incident, or emergency; and
6. evacuation procedures.

Verification: At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

HAZ-5 The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that would be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per the latest version of the NERC Security Guideline for the Electricity Sector: Physical Security).

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least eight feet high and topped with barbed wire or the equivalent (and with slats or other methods to restrict visibility if a fence is selected);

2. main entrance security gate, either hand operated or motorized;
3. evacuation procedures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
 - A. a statement (refer to sample, **Attachment A**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;
 - B. a statement(s) (refer to sample, **Attachment B**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;
6. site access controls for employees, contractors, vendors, and visitors;
7. a statement(s) (refer to sample, **Attachment C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;
8. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the O&M building (or remotely) with cameras able to pan, tilt, and zoom, have low-light capability, and able to view 100 percent of the perimeter fence, and outside entrances to the site for the BESS and O&M building; and,
9. additional measures to ensure adequate perimeter security consisting of either:
 - A. perimeter breach detection or onsite motion detector capabilities; and
 - B. security guard(s) present 24 hours per day, seven days per week; or
 - C. facility personnel on site 24 hours per day, seven days per week.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures

such as protective barriers for critical facility components, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation (NERC), after consultation with both appropriate law enforcement agencies and the project owner.

Verification: At least 30 days prior to the initial receipt of hazardous materials onsite, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. In the annual compliance report, the project owner shall include signed statements similar to Attachments A and B that all current project employees and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a signed statement similar to Attachment C that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

HAZ-6 The project owner shall prepare and submit to the CPM a Soils Management Plan (SMP) prior to any ground disturbing activities. The SMP shall be prepared/approved by a California Registered Civil Engineer or a California Registered Geologist with sufficient experience in hazardous waste management. The purpose of the SMP is to establish appropriate management practices and procedures for handling impacted soil and/or groundwater or other materials that may be encountered during construction activities to ensure worker protection from toxicant exposure. The SMP shall be updated as needed to reflect changes in laws, regulations, or site conditions. All ground disturbing activities at the site and potential disposal of contaminated soil and/or groundwater shall be conducted in accordance with the SMP. Where actions are required in accordance with the SMP, an SMP summary report, which includes all analytical data and other findings, shall be submitted once the earthwork has been completed.

Topics covered by the SMP shall include, but not be limited to:

1. Land use history including description and locations of any known contamination.
2. The nature and extent of any previous investigations and remediation at the site.
3. The nature and extent of any unremediated contamination at the proposed site.
4. A listing and description of institutional controls such as the county's excavation ordinance and other local, state, and federal regulations and laws that would apply to the project.

5. Names and positions of individuals involved with site management and their specific roles.
6. An earthwork schedule.
7. A description of protocols for the investigation and evaluation of any previously unidentified contamination that may be encountered in time. The protocol shall be for temporary and permanent controls that may be required to reduce exposure to onsite workers, visitors, and the public.
8. A site-specific Health and Safety Plan (HSP) to be implemented by all contractors and subcontractors at the site. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work. The HSPs shall be prepared by a Certified Industrial Hygienist and would protect onsite workers by including engineering controls, personal protective equipment, monitoring, and security to prevent unauthorized entry and to reduce construction related hazards. The HSPs shall address the possibility of encountering subsurface chemical contamination and include procedures to protect workers and the public. The HSPs shall be updated as needed if site conditions change significantly, such as discovery of contaminated soil or groundwater. Copies of the approved HSPs shall be kept at the project site.
9. Hazardous waste determination and disposal procedures for known and previously unidentified contamination.
10. Requirements for site-specific techniques at the site to minimize dust, manage stockpiles, run-on and run-off controls, waste disposal procedures, etc.
11. Copies of relevant permits or closures from regulatory agencies.

Verification: At least 45 days prior to any ground disturbance, the project owner shall submit the SMP to the Fresno County CUPA for review and comment and to the CPM for review and approval. An SMP summary shall be submitted to the CPM within 30 days of completion of any ground disturbance.

HAZ-7 The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall reflect experience in remedial investigation and feasibility studies.

The professional engineer or professional geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil and/or groundwater.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

HAZ-8 If seemingly contaminated soil and/or groundwater is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities (as evidenced by discoloration, odor, detection by handheld instruments, or other signs), the professional engineer or professional geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, Fresno County CUPA, and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the professional engineer or professional geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the professional engineer or professional geologist, significant remediation may be required, the project owner shall contact the CPM and representatives of the Fresno County CUPA for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the professional engineer or professional geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

HAZ-9 The project owner shall develop an air quality and water quality sampling plan to address potential container fires at the BESS. The plan shall include actions to implement so that appropriate air quality measurements can be taken immediately/automatically on-site during a fire and off-site measurements can be taken in real time to identify areas that are affected by smoke from the fire vs. areas that are not affected by the smoke plume from the fire. Real-time measurements would be preferred for off-site sampling, to provide timely feedback to any workers or people potentially affected. Water quality samples shall identify constituents in fire water used to extinguish the fire, to address the appropriate actions for water disposal after the fire.

The sampling plan should be based on the most current information available on air quality and water quality reported from fires at BESS facilities using similar lithium-ion battery configurations.

The project owner shall have a contract in place (as part of the plan) with an air testing company (or the local Air District) that can respond within hours to collect air samples from a thermal runaway event.

Verification: The project owner shall submit the proposed sampling plan to the CPM 45 days prior to proposed BESS operations for review, revisions, and approval prior to BESS operations.

5.7.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with CCR, title 14, section 15091(a)(2).

MM HAZ-1 Prior to construction, a Hazardous Materials Management Plan shall be prepared, which shall be implemented during construction to prevent the release of hazardous materials and hazardous waste.

The plan shall include the following requirements and procedures:

1. Training requirements for construction workers in appropriate work practices, including spill prevention and response measures. Additional training requirements for those performing excavation activities shall be required and shall include training on types of contamination and contaminants (e.g., petroleum hydrocarbons, asbestos, lead based paint and hazardous materials [as defined by the California Health and Safety Code (HSC)]) and identifying potentially hazardous contamination (e.g., stained or discolored soil and odor).
2. Contain all hazardous materials at work sites and properly handle, store, or dispose of all such materials.
 - a. Hazardous materials shall be stored on pallets within fenced and secured areas and protected from exposure to weather and further contamination.
 - b. Fuels and lubricants shall be stored only at designated staging areas.
3. Maintain hazardous material spill kits with appropriate materials for small spills at all active work sites and staging areas. Thoroughly clean up all spills as soon as they occur.
4. Store sorbent and barrier materials at all construction staging areas, including staging areas used during activities for decommissioning. Sorbent and barrier materials will be used to contain runoff from contaminated areas and from accidental releases of oil or other potentially hazardous materials.
5. Perform all routine equipment maintenance at a shop or at the staging area and recover and dispose of wastes in an appropriate manner.
6. Monitor and remove vehicles used for construction-related activities with chronic or continuous leaks from use and complete repairs before returning them to operation.
7. Store shovels and drums at the staging areas. If small quantities of soil become contaminated, use shovels to collect the soil and store in properly labeled drums before proper offsite disposal. Large quantities of contaminated soil may be collected using heavy equipment and stored in drums or other suitable containers prior to disposal.

Should contamination occur adjacent to staging areas because of runoff, shovels and/or heavy equipment shall be used to collect the contaminated

- material. Only trained construction workers shall handle hazardous, and potentially hazardous, materials.
8. Transporting, shipping, and disposal procedures for hazardous waste.
 9. Procedures for notifying PG&E and agency personnel in the event of the discovery of contaminated soil and/or groundwater. Contact information for federal, regional, and local agencies, the PG&E's environmental coordinator(s) responsible for the cleanup of contaminated soil or groundwater, and licensed disposal facilities and haulers.

MM HAZ-2 Prior to construction, the Construction and O&M Fire Protection and Prevention Programs shall be prepared. The program specifications are provided below:

Construction Fire Protection and Prevention Program. In accordance with 8 CCR, § 1920, a Fire Protection and Prevention Program shall be developed and implemented during Project construction. The Construction Fire Protection and Prevention Program shall include the following elements:

- A list of applicable standards and publications
- A map showing the project site, including layout, ingress, egress, drainage and grading, potential ignition sources during various phases of construction, and evacuation areas and/or muster locations
- A description of fire protections that would be implemented during construction activities, including water systems, gaseous agent systems, and fire extinguishers
- A description of detection and alarm systems that would be implemented during construction activities
- A list of all major fire hazards
- An outline of procedures to control accumulation of flammable and combustible waste materials
- An outline of procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent or control sources of ignition or fires
- Identification of Project personnel responsible for the control of fuel source hazards

O&M Fire Protection and Prevention Program. A Fire Protection and Prevention Program shall be developed and implemented during Project O&M activities. The O&M Fire Prevention Program shall include the following elements:

- A list of applicable standards and publications
- A map showing the Project site, facilities, ingress, egress, potential ignition sources, and evacuation areas and/or muster locations

- A description of fire protections that would be implemented during O&M activities, including permanent water systems, gaseous agent systems, and fire extinguishers
- A description of detection and alarm systems that would be implemented during O&M activities
- A list of all major fire hazards
- An outline of procedures to control accumulation of flammable and combustible waste materials
- An outline of procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent or control sources of ignition or fires
- Identification of project personnel responsible for the control of fuel source hazards
- An outline of procedures to respond to wildland and grass fires within the project vicinity or project site.

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for employment at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for contract work at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

(Company name)

for hazardous materials delivery to

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

5.7.6 References

- CAL FIRE 2023 – California Department of Forestry and Fire Protection. Fire Hazard Severity Zones in State Responsibility Area. Last updated September 29, 2023. Accessed on February 5, 2024. Available online at: <https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008>
- CAL FIRE 2024 – California Department of Forestry and Fire Protection. California Historical Fire Perimeters Webmap. Accessed on January 20, 2025. Available online at: <https://www.fire.ca.gov/what-we-do/fire-resource-assessment-program/fire-perimeters>
- Cal EPA 2024a – California Environmental Protection Agency. Cortese List Data Resources. Accessed on February 6, 2024. Available online at: <https://calepa.ca.gov/sitecleanup/corteselist/>
- Cal EPA 2024b – California Environmental Protection Agency. List of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit. Accessed on October 23, 2024. Available online at: <https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf>
- CPUC 2024 – California Public Utilities Commission. CPUC High Fire Threat District (HFTD) map viewer. Accessed January 2025. Available online at: <https://www.arcgis.com/apps/webappviewer/index.html?id=5bdb921d747a46929d9f00dbdb6d0fa2>
- DTSC 2020 – California Department of Toxic Substances Control. Determination of a Southern California Regional Background Arsenic Concentration in Soil, California Department of Toxic Substances Control. Available online at: <https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/Background-Arsenic.pdf>
- DTSC 2024 – Department of Toxic Substances Control. EnviroStor. Accessed on February 5, 2024. Available online at: <https://www.envirostor.dtsc.ca.gov/public/>
- Fresno County 2024 – Fresno County General Plan, October 2000. February 2024. Accessed on February 1, 2024. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/18117-2000-general-plan-policy-document.pdf>
- Fresno County 2024 – HazMat Compliance: The Designated CUPA. Accessed on February 1, 2024. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Health/Environmental-Health/HazMat-Compliance-The-Designated-CUPA>
- Fresno County 2018 – Fresno County Multi-Jurisdictional Hazard Mitigation Plan, May 2018. Accessed on February 6, 2024. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-health/fresno-county-hmp-final.pdf>

- Fresno County 2023 – Fresno County Municipal Code. Accessed on February 1, 2024. Available online at: https://library.municode.com/ca/fresno_county/codes/code_of_ordinances?nodeId=14972
- Kearney Foundation of Soil Science Division of Agriculture and Natural Resources 1996 – Background Concentrations of Trace and Major Elements in California Soils. March 1996. Available online at: <https://ucanr.edu/sites/poultry/files/297094.pdf>
- NYSERDA 2023 – New York State Energy Research & Development. Initial Findings Released from Inter-Agency Fire Safety Working Group on Emergency Response. Accessed on January 29, 2025. Available online at: <https://www.nyserda.ny.gov/About/Newsroom/2023-Announcements/2023-12-21-Governor-Hochul-Announces-Results-of-Fire-Safety-Working-Group>
- PG&E 2023 – Pacific Gas and Electric. PG&E’s 2023-2025 Wildfire Mitigation Plans. Accessed on January 27, 2025. Available online at: <https://efiling.energysafety.ca.gov/Lists/DocketLog.aspx?docketnumber=2023-2025-WMPs>
- RCI 2023cc – Rincon Consultants, Inc. (TN 252982). Section 5-11 Waste Management. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023f – Rincon Consultants, Inc. (TN 252927). Appendix O Soil Management Plan. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023k – Rincon Consultants, Inc. (TN 252932). Section 5-10 Worker Safety. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023l – Rincon Consultants, Inc. (TN 252933). Section 5-17 Wildfire. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024n – Rincon Consultants, Inc. (TN 255908). Data Response Set 3 Appendix F and Appendix G. Dated April 24, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023nn – Rincon Consultants, Inc. (TN 253034). Section 5-2 Land Use. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023o – Rincon Consultants, Inc. (TN 252939). Section 5-9 Hazardous Materials. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Rincon Consultants, Inc. (TN 256296). Data Request Response Set 4. Dated May 10, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2024vv – Rincon Consultants, Inc. (TN 260661). Supplemental Data Response Set 1 – Appendix K SUP DR PD-1 Darden Application Mitigation Measures. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2024w – Rincon Consultants, Inc. (TN 258490). CEC Data Request Response Set 5. Dated August 14, 2024. Available online: at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2024y – Rincon Consultants, Inc. (TN 258570). Data Response Set 6 – Appendix C REV 1 DR HAZ-2 Design Drawings. Dated August 20, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

SWRCB 2024 – State Water Resources Control Board. GeoTracker. Accessed on February 5, 2024. Available online at: <https://geotracker.waterboards.ca.gov/>

US EPA 2023 – United States Environmental Protection Agency. Exposure Assessment Tools by Routes. Last updated October 21, 2024. Accessed on February 1, 2024. Available online at: <https://www.epa.gov/expobox/exposure-assessment-tools-routes>

5.8 Land Use, Agriculture, and Forestry

5.8.1 Environmental Setting

The land use, agriculture, and forestry analysis focus on the consistency of the Darden Clean Energy Project (project) with existing land use resources, land use plans, laws, ordinances, regulations, standards (LORS), and the compatibility of the project with existing or reasonably foreseeable land uses. In general, construction and operation of a solar facility could be incompatible if there is a substantial preclusion (prevention or elimination) of the use, or if it would conflict with existing land use and/or zoning.

Existing Conditions

Regional Setting

The project is located in Fresno County, one of eight counties that comprise the San Joaquin Valley. The predominant land uses in the county include agricultural, public land and open space. The western portion of Fresno County is characterized by agriculture.

A portion of the Central Valley that includes Fresno County has faced ongoing losses of farmland, as excess soil salinity has caused farmland to idle. The California Department of Conservation (DOC) reported that Fresno County has experienced the reclassification of formerly high-quality agricultural land to grazing lands or lesser quality agricultural lands (Fresno 2023). In western Fresno County, where land is not irrigated during dry years based on available water supply, farmers have been forced to fallow hundreds of thousands of acres (University of California at Berkeley; County of Fresno 2023a).

The Westlands Water District (WWD) owns the majority of the property within the project site and is actively pursuing the retirement of 100,000 acres of agricultural land within its boundaries in an effort to reallocate water to unimpaired agricultural lands (WWD Groundwater Sustainability Agency (GSA) and County of Fresno GSA-Westside 2024), including the 9,100 acres associated with the solar facility, battery energy storage system (BESS), and step-up substation. This retirement would occur even without the development of the project. An additional 500,000 acres of agricultural lands in the San Joaquin Valley is expected to be retired in compliance with the Sustainable Groundwater Management Act (SGMA; PPIC 2023).

Study Area

'Project area' refers to the specific location or site where a project is being carried out, while 'study area' is used to define the geographical area or region under investigation in a research study. The extent of the area to be analyzed for land use, agriculture, and forestry impacts is considered the Land Use Study Area. The study area is defined as the geographic area within which the project may directly or indirectly affect an existing land use.

To determine the appropriate study area for the land use analysis, California Energy Commission (CEC) staff reviewed several filings by the applicant related to the proposed project area including the Applicant's Property Owner Information (RCI 2023b, **Appendix A**), which identified Assessor Parcel Numbers (APNs), owners, and locations within 1,000 feet of project facilities and within 500 feet of the generation-intertie line, the land use data of the application, and the applicant's responses to subsequent data requests and revised data.

The Land Use Study Area is further defined as the following:

- Land uses within the boundaries of the project area;
- Land uses immediately adjacent to construction or operation activities within the project area; and
- Land uses located along the construction and maintenance transport routes.

The project site consists of approximately 9,500 acres located along the west side of State Route 177 (SR-177) and 9.5 miles northeast of the junction of State Route 145 (SR-145) and Interstate-5 (I-5). The parcels in the project area are presented as illustrated on **Figure 3-2**. This list of parcels is identified by staff and presented in **Table 5.8-1**. A total of 42 parcels are associated with the approximately 9,100-acre area owned by WWD that would support construction and operation of the solar facility, BESS, step-up substation, and operations and maintenance (O&M) facility. Additional parcels are associated with generation-intertie line, right-of-way and Pacific Gas and Electric Company (PG&E) utility switchyard.

TABLE 5.8-1 ASSESSOR PARCEL NUMBER, LOCATIONS, AND WILLIAMSON CONTRACT STATUS

Assessor's Parcel No.	Section(s)-Township-Range	Williamson Act
Solar Facility, Step-up Station, BESS, and O&M Facility		
040-070-31	S22 - 16S - 16E	No
040-070-32	S22 - 16S - 16E	No
040-110-15	S35 - 16S - 16E	No
040-110-16	S34 - 16S - 16E	No
040-110-20	S36 - 16S - 16E	No
040-110-21	S26 - 16S - 16E	No
040-110-23	S26 - 16S - 16E	No
040-110-25	S26 - 16S - 16E	No
040-110-27	S27 - 16S - 16E	No
040-110-28	S27 - 16S - 16E	No
040-110-29	S27 - 16S - 16E	No
040-110-30	S27 - 16S - 16E	No
040-110-31	S26 - 16S - 16E	No
040-110-32	S26 - 16S - 16E	No
040-110-34	S25 - 16S - 16E	No
050-020-47	S4 - 17S - 16E	No
050-030-04	S2 - 17S - 16E	No
050-030-05	S2 - 17S - 16E	No

TABLE 5.8-1 ASSESSOR PARCEL NUMBER, LOCATIONS, AND WILLIAMSON CONTRACT STATUS

Assessor's Parcel No.	Section(s)-Township-Range	Williamson Act
050-030-07	S2 - 17S - 16E	No
050-030-08	S2 - 17S - 16E	No
050-030-10	S2 - 17S - 16E	No
050-030-21	S3 - 17S - 16E	No
050-030-24	S12 - 17S - 16E	No
050-030-25	S12 - 17S - 16E	No
050-030-26	S10 - 17S - 16E	No
050-030-27	S10 - 17S - 16E	No
050-030-29	S10 - 17S - 16E	No
050-030-30	S3 - 17S - 16E	No
050-030-31	S3 - 17S - 16E	No
050-030-32	S02, 03 - 17S - 16E	No
050-030-33	S3 - 17S - 16E	No
050-030-49	S10 - 17S - 16E	No
050-060-45	S21 - 17S - 16E	No
050-060-46	S16 - 17S - 16E	No
050-060-47	S16 - 17S - 16E	No
050-060-48	S16 - 17S - 16E	No
050-070-02	S15 - 17S - 16E	No
050-070-41	S15 - 17S - 16E	No
050-070-42	S15 - 17S - 16E	No
050-070-43	S15 - 17S - 16E	No
050-070-64	S15 - 17S - 16E	No
050-080-01	S18 - 17S - 17E	No
050-070-63	S15, 16 - 17S - 16E	No
Generation-Intertie Line Right-of-Way Easement Extension		
045-160-24	S25 - 17S - 14E	Yes
045-160-23	S25 - 17S - 14E	Yes
045-160-22	S25 - 17S - 14E	No
045-171-01	S30 - 17S - 15E	No
045-080-47	S19 - 17S - 15E	No
045-080-38	S19 - 17S - 15E	Yes
045-080-17	S20 - 17S - 15E	Yes
045-080-49	S21 - 17S - 15E	Yes
045-080-09	S16 - 17S - 15E	Yes
045-070-51	S15 - 17S - 15E	Yes
045-070-49	S15 - 17S - 15E	Yes
045-070-04	S14 - 17S - 15E	Yes
045-070-44	S14 - 17S - 15E	Yes
045-070-45	S14 - 17S - 15E	Yes
045-070-26	S13 - 17S - 15E	No
045-070-32	S13 - 17S - 15E	Yes
045-070-37	S13 - 17S - 15E	Yes
045-070-35	S13 - 17S - 15E	Yes
050-060-27	S18 - 17S - 16E	Yes

TABLE 5.8-1 ASSESSOR PARCEL NUMBER, LOCATIONS, AND WILLIAMSON CONTRACT STATUS

Assessor's Parcel No.	Section(s)-Township-Range	Williamson Act
050-060-38	S17 - 17S - 16E	Yes
050-060-24	S17 - 17S - 16E	Yes
050-060-48	S16 - 17S - 16E	No
050-060-20	S16, 21 - 17S - 16E	Yes
050-070-43	S15 - 17S - 16E	No
050-070-02	S15 - 17S - 16E	No
050-070-42	S15 - 17S - 16E	No
050-030-27	S10 - 17S - 16E	No
050-030-26	S10 - 17S - 16E	No
050-030-21	S3 - 17S - 16E	No
PG&E Utility Switchyard		
045-160-24	S25 - 17S - 14E	Yes

Note: All parcels are located within Fresno County
Source: Rincon, 2023ee

Project Site

The project site is located primarily on undeveloped land that was designated for retirement from agricultural use due to soil alkalinity and water constraints, although some row crop cultivation remains on some parcels in the central portion of the project site through the use of a drip irrigation system, the land is no longer provided with water from the WWD or available for future agricultural use. As mentioned in the "Project Objectives" subsection in **Section 3, Project Description**, the project would "minimize environmental impacts and land disturbance by siting the facility on relatively flat, contiguous lands with low quality habitat, high solar insolation in close proximity to existing roads and established utility corridors."

Existing structures on the project site are limited to a former administrative structure, a small number of dwellings for agricultural workers (approximately six), remnant concrete foundations for former buildings, a former oil well, small slabs with water well pumps, and some small cement slabs that formerly supported water pumps. Unpaved roads generally trend along the parcel boundaries. A canal is located along the north boundary of APNs 040-110-23ST, 040-110-32ST, and 040-110-32ST. A separate canal is also located along the north boundary of APN 040-110-15ST. A separate tree-lined canal was also observed along the eastern boundary of APN 050-030-29ST.

Study Area Land Use

General Plan Land Use Designations. The study area is located entirely within unincorporated areas of Fresno County. Land use provisions included in every California city and county general plan reflect the goals and policies that guide physical development of land within its jurisdiction (California State Planning Law, Government Code Section 65302 et seq.). A general plan land use designation identifies the general type of use (e.g., residential, commercial, industrial) and the intensity of the use, and associated objectives, goals, and policies.

The 2024 Fresno County General Plan identifies three land uses within the study area: Agriculture, Westside Rangeland, and Westside Freeway Corridor Overlay.

Agriculture. The agriculture designation provides for the production of crops and livestock, and for the location of agricultural commercial centers, processing facilities, and certain nonagricultural activities (Fresno 2024a).

Westside Rangelands. The westside rangeland designation provides for grazing and other agricultural operations, mining, oil and gas development, wildlife habitat, various recreational activities, and other appropriate open space uses (Fresno 2024a).

Westside Freeway. The Westside Freeway Corridor Overlay designation provides for uses at designated interchanges that cater to the needs of long-distance freeway users and agriculture-related enterprises. Typical permitted uses include hotels, motels, rest areas, agricultural-related uses, and truck service and repair facilities (Fresno 2024a).

The General plan includes goals and policies for these areas that reflect the County’s commitment to preserve the open rural character of the county while recognizing the need to maintain economic productivity and allow for urban growth (County of Fresno, 2024). The intent of the policies is to direct development to minimize the loss of valuable open space (Fresno 2024a).

Existing Land Use. While a general plan is used to guide future development, the land use designations within the general plan do not necessarily reflect the current land uses within the project area. **Table 5.8-2** lists designated land uses residing within and outside the study area. Those land uses fully within the study area are further explained within the section.

TABLE 5.8-2 STUDY AREA LAND USE DESIGNATIONS		
LAND USE	Within Study Area	Outside of Study Area
Residential	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Commercial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Recreational	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Open Space	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Scenic	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Natural Resource Protection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Natural Resource Extraction	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Educational, Childcare and Nursing Home Facilities	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Religious	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural and Historic	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Agricultural	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unique Land Uses	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Source: Fresno, 2024a

Natural Resource Protection

The Southwest San Joaquin Valley Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) is under development and would include approximately 1.9 million acres that extend from western Fresno County to southern Kern County. Although the applicable state and federal agencies have not yet prepared the plan, the intent of the plan is to provide a program for compliance with the federal Endangered Species Act and the California Endangered Species Act. Aera Energy LLC, US Fish and Wildlife Service, California DOC, and California Department of Fish and Wildlife entered into an agreement to prepare the plan in 2020 (Area Energy, LLC 2020). A portion of the study area west of I-5 intersects the Southwest San Joaquin Valley HCP and NCCP; however, the project site is not within the jurisdiction of the forthcoming plan.

Cultural and Historic

The Fresno County General Plan contains policies that “seek to preserve historical, archaeological, paleontological, geological, and cultural resources of the county through development review, acquisition, encouragement of easements, coordination with other agencies and groups, and other methods” (Fresno 2024). As described in **Section 5.4, Cultural and Tribal Resources**, the California Historical Resources Information System (CHRIS) records search identified 19 cultural resources studies within one mile of the project site, seven of which include a portion of the project site. The San Joaquin Valley Information Center (SSJVIC) identified records of 11 cultural resources within one mile of the solar facility, generation-intertie alignment, and the PG&E utility substation locations, four of which would cross the generation-intertie alignment. A supplemental records search identified eight resources within the PG&E project area.

A survey of built-environment resources identified four properties recommended for the California Register of Historic Resources (CRHR):

- San Luis Canal Division of the California Aqueduct
- Quonset hut cabin at 17631 South Sonoma Avenue (APN 050-020-25)
- Four dormitory residences at 18117 South Sonoma Avenue (APN 050-020-37)
- An isolated obsidian biface

To date, no tribal cultural resources have been identified within the project site; however, the project site was identified as having a moderate to high archaeological sensitivity for buried archaeological resources.

Agriculture and Farmland

Agricultural lands within the study area have been used to support a variety of crops. Although the proposed project would be constructed on approximately 9,100 acres of property owned by the WWD, some cultivation continues within the project using drip irrigation system.

The California DOC provides definitions for various types of farmland that are applied to the Farmland Mapping and Monitoring Program (FMMP).

Prime Farmland. Irrigated land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. Land must have been used for the production of irrigated crops at sometime during the four years prior to the FMMP map date (DOC 2023a).

Farmland of Statewide Importance. Irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops. Land must have been used for production during the four years prior to the FMMP mapping date (DOC 2023a).

Farmland of Local Importance. Land of importance to local economy as determined by each count's board of supervisors and a local advisory committee. This includes confined animal agriculture (DOC 2023a).

Unique Farmland. Lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones of California. Land must have been cropped at some time during the four years prior to the mapping date (DOC 2023a).

Semi-Agricultural and Rural Commercial Lands. This includes farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, firewood lots and campgrounds.

Figure 5.8-1 shows an overview of farmland mapping and monitoring program designations in the study area. The agricultural lands within the study area were historically used to cultivate a variety of crops as shown in **Figure 5.8-2** and **Table 5.8-3**.

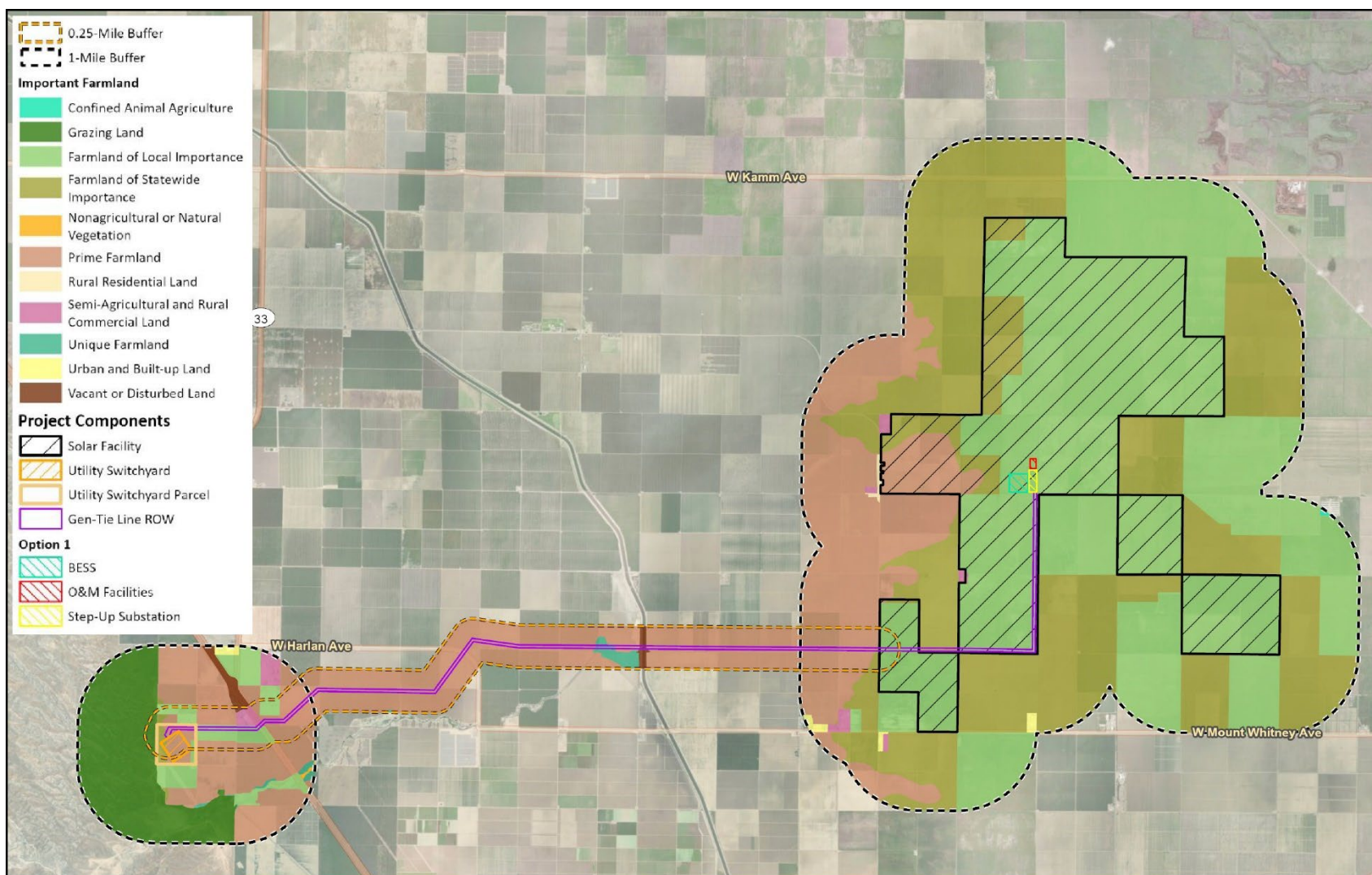


Figure 5.8-1
Overview of Farmland Mapping and Monitoring Program Designations

Sources: IP 2025b

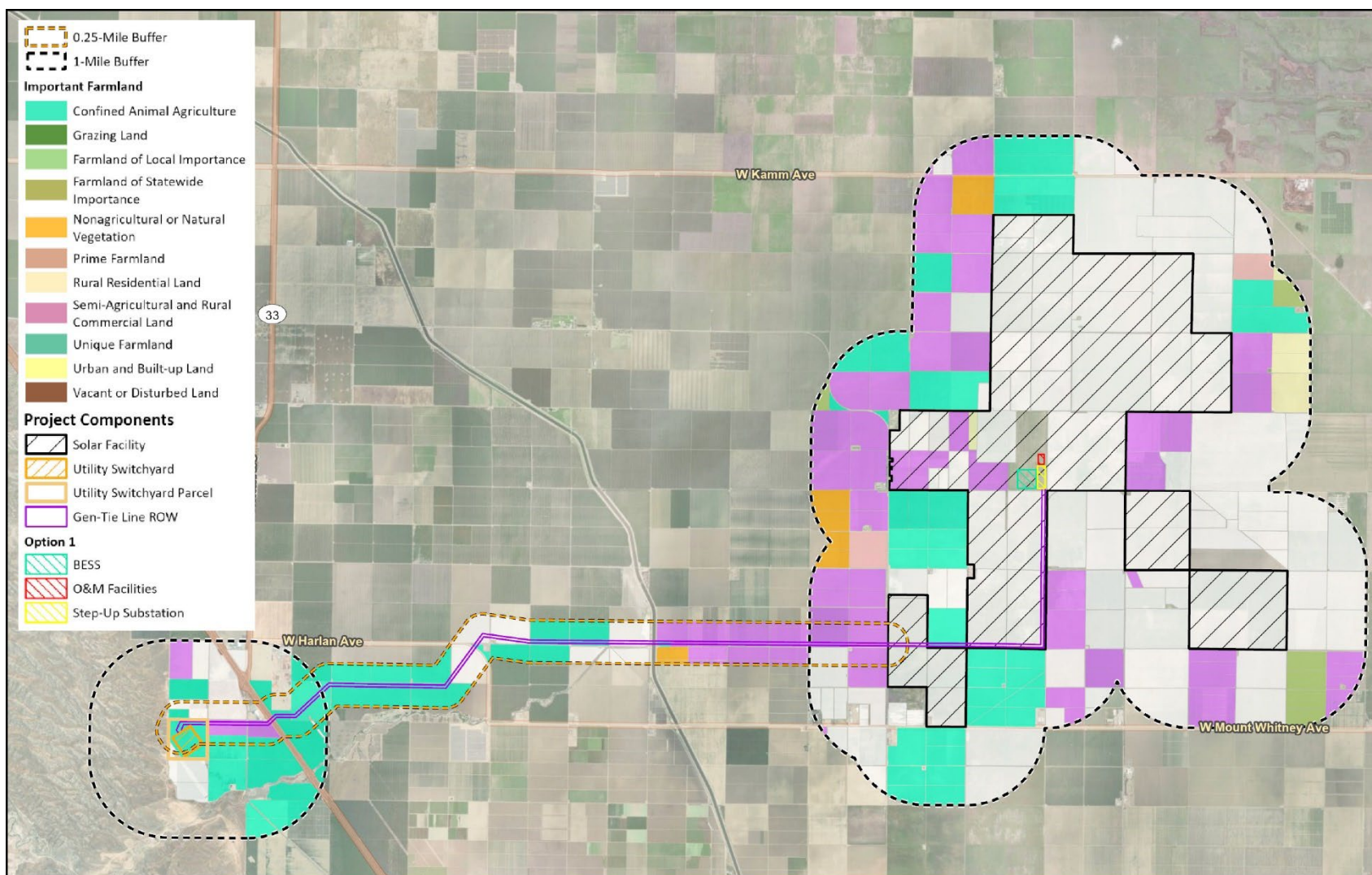


Figure 5.8-2
Overview of Agricultural Uses Within Study Area

Sources: IP 2025b

Crops within the study area were primarily irrigated using drip irrigation systems, as is over 90 percent of WWD lands (Westlands Water District 2023).

The construction and operation of the utility switchyard would occupy 50 acres of a 139-acre parcel (IP 2024n, RCI 2023nn, Table 5.2-1). The utility switchyard would result in the conversion of a parcel that contains 99 acres designated by California DOC's FMMP as Prime Farmland and 38 acres designated as Farmland of Statewide Importance (RCI 2023nn, p. 5.2-68) that is anticipated for retirement in compliance with SGMA, which proposed the retirement of approximately 500,000 acres of farmland.

TABLE 5.8-3 CROPLAND BY ACREAGE WITHIN THE PROJECT SITE

Agricultural Use	Acreage within Project Site
Solar Facility, Operations 1 and 2 Substation and BESS	
Deciduous Fruits and Nuts	1.66 acres
Grain and Hay Crops	158.22 acres
Nursery and Berry Crops	431.89 acres
Unclassified	8,190.85 acres
Gen-tie Line Easement and Easement Extension	
Deciduous Fruits and Nuts	111.56 acres
Nursery and Berry Crops	85.21 acres
Unclassified	124.06 acres
Utility Switchyard	
Deciduous Fruits and Nuts	124.21 acres
Unclassified	9.12 acres
TOTAL CROPLAND	9,236.78 acres¹

Zoning

The project site is currently zoned as Exclusive Agricultural (AE) (AE-20 and AE-40). The AE district is intended for uses which are necessary and an integral part of the agricultural operations. These uses include, but are not limited to, livestock and poultry breeding, crop planting, crop shipping, single-family residences and farm buildings, and farmworker housing complexes.

On December 17, 2024, the Fresno County Board of Supervisors approved amendments to Fresno County Zoning Ordinance section 842.5.020.B.14, which through the issuance of an Unclassified Conditional Use Permit allows on the project site, "Power production, storage and generation facilities (includes utility-scale photovoltaic facilities subject to the County's adopted Solar Facility Guidelines, wind farms and hydroelectric facilities subject to County jurisdiction) including without limitation any associated facilities for the storage or transmission of electrical energy."² In considering whether to issue an

¹ California Natural Resource Agency, 2020

² See minutes of December 17, 2024, Board of Supervisor meeting, agenda item 7. Available online at: <https://fresnocounty.legistar.com/View.ashx?M=M&ID=1122173&GUID=CBB6B44D-047D-431E-8AD2-EE6F25AB6D19>

Unclassified Conditional Use Permit, Fresno County Zoning Ordinance, section 842.5.010, directs the County to weigh the public need for and the benefit(s) to be derived from the proposed use against the potential negative effects it may cause.

CEC's certificate authorizing the construction and operation of the solar facility, BESS, step-up station, O&M facility, and generation-intertie lines would be in lieu of Fresno County's Unclassified Conditional Use Permit (Pub. Resources Code §§ 25500, 25110, 25119; Cal. Code. Regs., tit. 20, § 1201 (q)).

The switchyard and downstream network upgrades are under the jurisdiction of the California Public Utilities Commission (CPUC). Under CPUC General Order 131-D section XIV, local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. For the purposes of this analysis, the project is evaluated based on its conformity with the 2024 Fresno County General Plan and 2025 zoning ordinance (See **Table 5.8-4**).

Regulatory

Several state and local regulations pertaining to land use and agriculture apply to the project. All plans and policies applicable to the study area are summarized below.

State

California Land Conservation Act of 1965 (Williamson Act). The Williamson Act has been the state's primary agricultural land protection program since the California Legislature passed the Act in 1965 to preserve agricultural and open-space lands by discouraging "premature and unnecessary conversion to urban uses" (DOC 2022). The Williamson Act authorizes cities and counties to enter into contracts with private landowners to restrict specific parcels of land to agricultural and open space uses. In return, landowners receive reduced property tax assessments based upon the land's farming and open space uses rather than on its full market value. Landowners can place prime agricultural land and non-prime agricultural land under contract, typically for 10-year terms that are automatically renewed on an annual basis. Cities and counties can also offer 20-year contracts, known as Farmland Security Zone or Super Williamson Act contracts, for certain types of agricultural lands defined by the DOC's Farmland Mapping and Monitoring Program.

Figure 5.8-3 shows existing contracts within the study area.

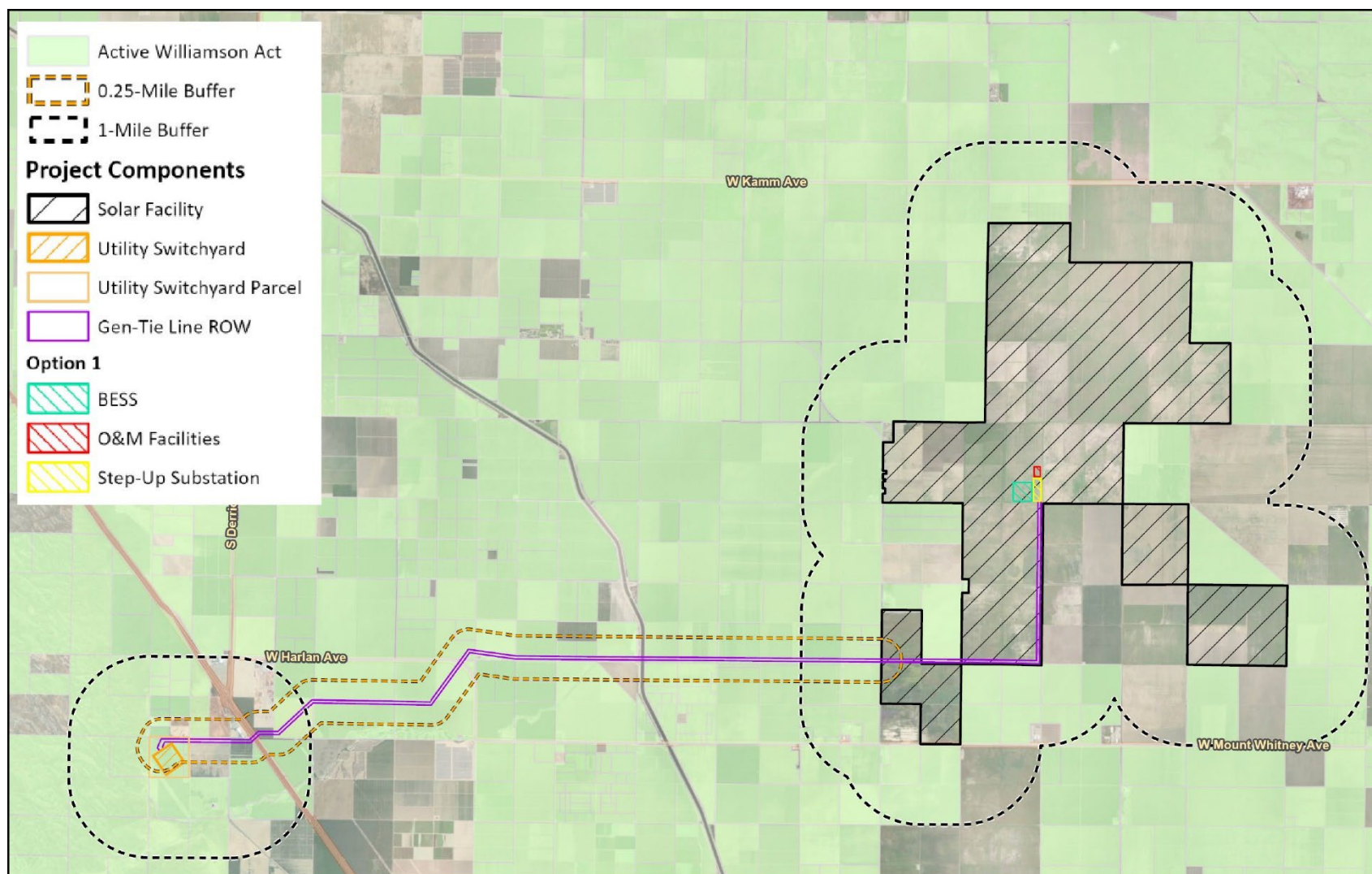


Figure 5.8-3
Overview of Existing Williamson Act Contracts Within the Study Area

Sources: IP 2025b

California Government Code. California Government Code, Title 5, Division 1, Part 1, identifies the powers and duties common to local agencies. Article 2.5 Agricultural Reserves, Section 51238 (a)(1), states that “Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve”. The project would not require the cancellation of Williamson Act contracts due to the compatibility of the project as electric facilities under Government Code Section 51238.

Sustainable Groundwater Management Act (SGMA). Requires groundwater management agencies to bring groundwater withdrawals into sustained yields over a 20-year period, which is anticipated to result in retirement of an estimated 500,000 acres of land in San Joaquin Valley from 2014 through 2040. SGMA requires governments and water agencies of high- and medium-priority basins to halt overdrafts of groundwater basins. SGMA requires the formation of local GSAs that are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. Implementation of SGMA in San Joaquin Valley is anticipated to result in 500,000 acres of land retired from agricultural uses. The project site is on land expected to be retired in accordance with SGMA.

Local

Sagouspe Settlement Agreement. The Sagouspe Settlement Agreement, executed September 15, 2015, requires land within WWD jurisdiction to be permanently retired from irrigated agriculture in compliance with a United States District Court order settling claims of improper drainage services provided by the United States Bureau of Reclamation (United States District Court for the Eastern District of California 2015). Parcels within the project site are subject to the Sagouspe Settlement Agreement and designated for retirement from irrigated agriculture.

County of Fresno General Plan (2024) and County of Fresno Zoning Ordinance. Each California city and county government’s General (California State Planning Law, Government Code Section 65300 et seq.) include land use provisions that reflect the goals and policies that guide the physical development of land in their jurisdiction. The General Plan is a legal document that serves as a “blueprint” or “constitution” for land use and development. Fresno County’s Zoning Ordinance is the principal tool for implementing the Fresno County General Plan.

The County of Fresno Division of Public Works and Planning, Development Services Division, is responsible for enforcing the County’s General Plan and zoning ordinance. The County of Fresno permits utility-scale renewable energy uses in areas designated for agricultural activities with an Unclassified Conditional Use Permit based on the provisions set forth in Section 842.5 of the Zoning Ordinance of the County of Fresno.

5.8.2 Environmental Impacts

LAND USE, AGRICULTURE, AND FORESTRY	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Would the project Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code, section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Would the project result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, land use and planning and agriculture and forestry resources.

5.8.2.1 Methodology and Thresholds of Significance

Staff reviewed the project to identify its conformance with applicable LORS related to land use, agriculture and forestry resources. The impact analysis is based on a review

of the County of Fresno General Plan and its associated land use designations, objectives, goals and policies, the Fresno County zoning code, and other adopted plans developed to avoid or mitigate adverse effects on environmental resources. Staff reviewed FMMP maps to determine the extent to which the project would convert agricultural land to non-agricultural use. The status of Williamson Act contracts was reviewed to determine compatibility with existing contracts.

Significance criteria used in this analysis are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. An impact of the proposed project may be considered significant and require mitigation if it would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
3. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
4. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
5. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 122220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
6. Result in the loss of forest land or conversion of forest land to non-forest use.
7. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

5.8.2.2 Direct and Indirect Impacts

a. Would the project physically divide an established community?

Construction and Operation— *No Impact*

Based on the analysis below, project construction and operation would not physically divide an established community.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction and operation of the solar facility, BESS, step-up substation, and O&M facility, would occur in a rural area, approximately 3.9 miles east of Cantua Creek, the nearest census-designated community, and 5.6 miles south of the City of San Joaquin,

the nearest city to the project site. The generation-intertie line would be constructed within easements on agricultural parcels or adjacent to existing infrastructure.

The project would not be located within an existing community; therefore, neither construction nor operation of the project would separate an established community. Further, the traffic analysis presented in **Section 5.14, Transportation**, states that “neither construction nor facility operation would cause a substantial increase in traffic volumes to affect the efficiency of the transportation system;” therefore, the project would not affect access to nearby communities. No impact would occur.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of the utility switchyard would occur on agricultural land approximately 7.4 miles southwest of Cantua Creek. The location of the switchyard would not divide an established community. The downstream network upgrades would be constructed within designated right-of-ways for Westside Freeway.

As described in **Section 3, Project Description**, all three scenarios for PG&E downstream network upgrades would include linear routes along existing transmission line corridors, which generally run parallel to Interstate 5. The downstream network upgrades would not divide an established community regardless of scenario. Further, the traffic analysis presented in **Section 5.14, Transportation**, states that “neither construction nor facility operation would cause a substantial increase in traffic volumes to affect the efficiency of the transportation system; therefore, the project would not affect access to nearby communities. No impact would occur.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction and Operation— Less Than Significant with Mitigation Incorporated

As detailed in the analysis below, the project would not conflict with any land use plan, policy, or regulation with incorporation of Conditions of Certification (COCs) and Mitigation Measures (MMs); therefore, the project’s land use impacts would be reduced to less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Fresno County Land Use and Zoning

Fresno County has been a leading agricultural county in the United States since the 1950s, and one of the themes of the general plan is to protect agricultural land as the county’s most valuable natural resource by directing new urban growth to cities and limiting encroachment of incompatible development in agricultural areas. General plan

policies seek to protect agricultural activities from incompatible land uses and promoting agricultural land preservation programs.

The agricultural land designation provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, processing facilities and certain non-agricultural activities. Although the Agriculture Element of the General Plan does not normally allow for the development of power generation facilities on agricultural land, in this case the development of the solar facility, BESS, step-up substation, and O&M facilities would not conflict with the general plan because the facilities would be constructed on land that would be retired from agricultural use.

The proposed generation-intertie line would be constructed on an easement that passes through agricultural land, including prime farmland. The easements would enable agricultural production to continue on adjacent property.

Specific policies in the County's Agricultural Element that would apply to the proposed development include:

- Policy LU-A.13, Agricultural Buffers, requires buffers to protect agricultural operations from conflicts with proposed non-agricultural uses. The project would comply with this policy by providing buffers and easements between project components and adjacent agriculture.
- Policy LU-1.14, Agriculture Land Conversion Review, requires the county to ensure the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate. The project would comply with this policy through converting primarily agricultural land designated for retirement to non-agricultural use.
- Policy LU-A.22, Drought Impacts, states that the County shall support policies and programs that seek to minimize the impact of recurring drought conditions on groundwater supply and the agricultural industry. The project would be constructed on agricultural lands that are designated for retirement, are no longer irrigated, and would not be irrigated following transfer to the applicant; therefore, the project would comply with this policy.
- Policy LU-A.23, Farmland Conversion, states that the County shall consider and adopt feasible mitigation measures when discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of designated Prime Farmland, Unique Farmland or Farmland of Statewide Importance to nonagricultural uses. The project complies with this measure as it would be developed on retired farmland and pursuant to a local groundwater sustainability plan.
- LU-F.30, Industrial Discretionary Use Permit, which allows the County to approve discretionary permits for new industrial development or expanded industrial uses subject to conditions associated with specific criteria (see **Table 5.8-4** for a complete description). Staff concluded that the project is consistent with this policy

based on its analysis and proposed COCs, **WORKER SAFETY-1** to **WORKER SAFETY-12** in **Section 4.4, Worker Safety and Fire**, COCs **HAZ-1** to **HAZ-9** in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, COCs **AQ-SC1** to **AQ-SC6** in **Section 5.1 Air Quality**, and COC **VIS-1** in **Section 5.15, Visual Resources**. Staff concluded that with incorporation of the above-listed COCs, the project would comply with this policy.

The General Plan includes several policies that are presented in other elements, such as Public Facilities and Services, Open Space, Health and Safety, and Environmental Justice (EJ) as shown in **Table 5.8-4**. Staff reviewed these policies and addressed them in other sections of this document including **Section 5.2, Biological Resources**; **Section 5.7, Hazards, Hazardous Materials and Wildfire**; **Section 5.9, Noise**; and **Section 5.15, Visual Resources**. Staff concluded that the project would comply with these policies because potential impacts would be less than significant or less than significant with mitigation incorporated.

Although the County General Plan land use designation of Agriculture does not normally allow for power generation facilities, the County Zoning Code would allow for the project and its components. Section 842.5 of the zoning code specifically identifies “power production and generation facilities, including utility-scale photovoltaic facilities,” as an allowable use in any zoning district subject to an Unclassified Conditional Use Permit as specified in Section 842.5 of the Fresno County Zoning Code (County of Fresno, 2024). To determine consistency with the Fresno County Land Use Ordinance, the CEC must determine whether the project would comply with the County’s required four findings for a conditional use permit (CUP):

1. The site for the proposed use is adequate in size and shape to accommodate the use and all yards, spaces, walls and fences, parking, loading, landscaping, and other features required by this Chapter, to adjust the use with land and uses in the neighborhood;
2. The site for the proposed use relates to streets and highways adequate in width and pavement type to carry the quantity and kind of traffic generated by the proposed use;
3. The proposed use will have no adverse impact on abutting property and surrounding neighborhood or allowed use thereof; and
4. The proposed development is consistent with the General Plan.

CEC staff reviewed the project and determined that it would comply with the four required findings. The approximately 9,100-acre area associated with WWD is sufficient to accommodate the solar facility, BESS, step-up station, and O&M facility, including necessary off-street parking for permanent and intermittent site workers. The generation-intertie line would be constructed in an easement. As described in **Section 5.14, Transportation**, the proposed project would have a less than significant effect on the circulation system during construction, and no effect during project operation. In addition, the project would result in a less than significant effect

on emergency access to the project area. The proposed project would include a 50-foot setback between project structures and adjacent land uses, which meets or exceeds the County's required setbacks identified in its zoning code. As previously described the proposed project would be consistent with general plan policies following the implementation of staff's recommended COCs.

Since the project would comply with the required CUP Findings, the project would be consistent with the Fresno County General Plan and Zoning Code, the project would have a less than significant impact with mitigation incorporated.

PG&E Utility Switchyard and Downstream Network Upgrades

Land Use and Zoning Code

The PG&E utility switchyard would be constructed on property designated for agricultural use. As noted, under CPUC General Order 131-D local jurisdictions are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. This includes conflicting zoning designations.

As described in the other technical sections, potential impacts from the construction and operations of the utility switchyard would be less than significant with implementation of recommended mitigation measures. Thus, the County's four findings for a CUP would be met.

Other Applicable Plans

Construction and operation of the solar facility, BESS, step-up substation, and O&M facility would not occur in the area covered by the forthcoming Southwest San Joaquin Valley HCP and NCCP that is under development. Thus, the project site is not within the jurisdiction of the forthcoming plan.

Section 5.2, Biological Resources, considered the project's potential to cause adverse effects on sensitive habitats and sensitive natural communities identified in local or regional plans, policies, and regulations by the Department of Fish and Wildlife or the United States Fish and Wildlife Services during construction and operation. Staff's biological analysis analyzed the project's potential impacts on riparian habitat and other sensitive natural communities, such as Cantua Creek, the Fresno Slough, and protected wildlife and plant species, and concluded that the potential impacts would be less than significant with the application of mitigation measures for biological resources and many other resource areas, such as **MM BIO-1** through **MM BIO-13**, and **MM AQ-1**.

Section 5.4, Cultural and Tribal Cultural Resources, also considered the project's potential to cause a substantial adverse change to significant historical archaeological, or tribal resources. Staff concluded that the potential effects of ground disturbing

activities on these resources would be less than significant following the application of mitigation measures for cultural and tribal resources.

The Southwest San Joaquin Valley HCP and NCCP is under development and would include approximately 1.9 million acres that extend from western Fresno County to southern Kern County. A portion of the study area west of Interstate 5 intersects the Southwest San Joaquin Valley HCP and NCCP. The proposed project would not include these areas.

Staff reviewed the potential of the project to affect protected resources associated with construction and operation of the switchyard and downstream network upgrades. As discussed in **Section 5.2, Biological Resources**, the project area includes riparian areas, aquatic resources, and sensitive natural communities. Staff concluded that protected resources do not occur within the utility switchyard area, or the areas associated with any of the downstream network upgrade scenarios. The Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs), and the restoration of temporary impact areas in accordance with standard PG&E Construction Measures would reduce potential impacts.

Staff also considered the project's potential to cause a substantial adverse change to significant historical archaeological, or tribal resources. Staff concluded that the potential effects of ground disturbing activities on these resources would be less than significant following the application of mitigation measures for cultural and tribal cultural resources.

c. Would the project Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, impacts associated with the project converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The proposed solar facility, BESS, step-up substation, and O&M Facility would be located on approximately 9,100 acres in an agricultural area. Land-cover types are predominantly retired agricultural lands that have been irregularly farmed over the last 10 years and seasonally or annually disked when not growing crops, and associated dirt roads, field and road shoulders, basins, ditches, and berms. The land-cover type within the proposed solar facility project site currently has two windrows of red gum eucalyptus, and with other large trees sparsely situated throughout the area associated

with the solar facility. The generation-intertie line corridor consists of active agricultural land with some retired and managed agriculture or disked fields. The BESS location has both retired and managed agricultural land (Rincon, 2023nn).

Within the solar facility, there are approximately 480 acres designated as Prime farmland and approximately 7,800 acres designated as Farmland of Statewide Importance (see **Figure 5.8-1**). However, both Prime Farmland and Farmland of Statewide importance are defined as irrigated lands. The WWD owns the area including the solar facility and would retire the lands from agricultural production to be consistent with the Groundwater Sustainability Plan. Since 1998, WWD has removed water allocations of drainage impaired land to reallocate water to land without drainage impairments. As part of the land transfer to the applicant, WWD would subject the land to a non-irrigation covenant, meaning that land would be restricted from irrigated agricultural use (Westlands Water District GSA and County of Fresno GSA – Westside 2022). Therefore, farmland associated with the solar facility, BESS, step-up station, and O&M facility do not meet the definition of Prime Farmland and Farmland of Statewide Importance.

The portion of the proposed generation-intertie line associated with WWD property would traverse Farmland of Local Importance. The portion of the generation-intertie line constructed outside of the solar facility would traverse land that is predominantly Prime Farmland. The applicant would establish right-of-way along the generation-intertie route to accommodate concrete pads and overhead lines. Cultivation would remain along the right-of-way, except for the areas that include the concrete pads that would anchor the tubular steel poles that support the overhead line.

Since the solar facility and a portion of the generation-intertie line corridor would be constructed on farmland designated for retirement in accordance with the Groundwater Sustainability Plan, no project-related impact is associated with the conversion of farmland; however, a small amount of land would be removed from cultivation to accommodate concrete pads for the generation-intertie line.

Fresno County General Plan Policy LU-A.23 requires mitigation for discretionary land projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of 20 acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to nonagricultural uses, such as the establishment of conservation easements, mitigation land, fee-in-lieu, or mitigation banking. However, the County may exempt projects from agricultural mitigation when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan. The proposed conversion of farmland is associated with an existing Groundwater Sustainability Plan; therefore, mitigation would not be required. Therefore, this impact would be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

The construction and operation of the utility switchyard would occupy 50 acres of a 139-acre parcel (IP 2024n, RCI 2023nn, Table 5.2-1). The utility switchyard would result in the conversion of a parcel that contains 99 acres designated by the FMMP as Prime Farmland and 38 acres designated as Farmland of Statewide Importance (RCI 2023nn, p. 5.2-68) that is anticipated for retirement in compliance with SGMA, which proposed the retirement of approximately 500,000 acres of farmland; therefore, the loss of 139 acres would be considered less than significant. Downstream network upgrades would be located in a disturbed area and would not result in the loss of important farmland. (Rincon, 2023nn).

Fresno County General Plan Policy LU-A.23 requires mitigation for discretionary land projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of 20 acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to nonagricultural uses. However, the County may exempt projects from agricultural mitigation when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan. The proposed conversion of farmland associated with the downstream network upgrades is anticipated for retirement in compliance with SGMA; therefore, mitigation would not be required, and this impact would be less than significant.

d. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

As previously mentioned, the Williamson Act has been the state's primary agricultural land protection program since the California Legislature passed the Act in 1965 to preserve agricultural and open-space lands by discouraging "premature and unnecessary conversion to urban uses" (DOC 2022). CEC reviewed the project components to determine whether their locations would conflict with or lead to the cancellation of Williamson Act contracts.

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, project construction and operation would have a less than significant impact associated with a conflict with zoning for agricultural use and Williamson Act contracts.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

As stated previously jurisdictional project components will be constructed and operated on 9,100 acres that are owned by WWD and designated for retirement from agricultural use. The generation intertie line will be constructed on an easement. The Fresno

County zoning code allows the development of utility-scale energy production project in accordance with an Unclassified Conditional Use Permit.

Table 5.8-1 identifies parcels associated with within the solar facility, BESS, step-up station, O&M facility, and generation-intertie line facilities. As shown in the table, the area containing the solar facilities, BESS, step-up station, and O&M facility does not include parcels engaged in Williamson Act contracts.

As shown in **Table 5.8-1**, the generation-intertie line right-of-way crosses 29 parcels, 18 of which are which are subject to Williamson Act contracts. Linear facilities, such as gen-tie lines, are statutorily deemed to be compatible with Williamson Act contacts per Government Code Section 51238(a)(1) which states, "Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Fresno County has not made any contrary determination; therefore, the generation-intertie line is deemed compatible. Accordingly, these project components would not require the cancellation of Williamson Act contracts under Government Code Section 51238. The impact associated with construction and operation and of these components would be less than significant.

Construction and operation of the project's jurisdictional components would have a less than significant impact associated with existing zoning for agricultural use and parcels in Williamson Act contracts.

PG&E Utility Switchyard and Downstream Network Upgrades

The utility switchyard would be located on a parcel that is subject to a Williamson Act contract. However, the utility switchyard is an electric facility considered to be compatible with an agriculture preserve (Government Code Section 51238(a)), and the County has not made any finding to the contrary. In addition, the acquisition of the land and utility switchyard by PG&E, for purposes of supporting and improving the regional grid, potentially voids the Williamson Act contract under Government Code Section 51295.

The downstream network upgrades would include the construction of fiber line scenarios including long, linear, optical ground wire (OPGW) routes to connect the new PG&E utility switchyard to existing PG&E facilities and infrastructure.

Regardless of the scenario selected for the downstream network upgrades, the proposed network upgrades are linear features, which are statutorily deemed to be compatible with Williamson Act contacts per Government Code Section 51238(a)(1). The impact associated with construction and operation and of these components would be less than significant.

- e. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, section 12220(g)), timberland (as defined by Public Resources Code, section 4526), or timberland zoned Timberland Production (as defined by Government Code, section 51104(g))?**

Construction and Operation— *No Impact*

As shown in **Figure 5.8-2**, no portion of the project study area contains any forest land or timberlands; therefore, no impacts would occur related to this CEQA criterion.

- f. Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

Construction and Operation— *No Impact*

As detailed in **Figure 5.8-2**, no portion of the project study area contains any forest land therefore there would be no impacts related to this CEQA category.

- g. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, the project would result in a less than significant impact associated with the project involving other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or the conversion of forest land to non-forest use.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction and operation of the proposed solar facility, BESS, step-up substation, O&M facility and a portion of the generation-intertie line would be constructed on approximately 9,100 acres of property owned by WWD and would result in the conversion of unused and currently cultivated farmland to non-agricultural use; however, these agricultural lands have been designated for retirement. As part of the land transfer to the applicant, WWD would subject this land to a non-irrigation covenant, meaning the land would be restricted from current and future irrigated agricultural use (Westlands Water District GSA and County of Fresno GSA-Westside 2022). The retirement of water in the 9,100 acres associated with the solar facility and other features would enable more water to be available for other agricultural land within WWD.

In addition, the portion of the generation-intertie line that would be constructed outside of the solar facility would require the conversion of discrete areas within an established easement to be converted from agricultural to non-agricultural use. The County of Fresno General Plan considers the construction of linear facilities to be compatible with agricultural use. The establishment of specific rights-of-way/easements with landowners would enable cultivation to continue outside of easement areas. The study area does not contain forested areas or known mineral resources (DOC 2023b). The impact associated with construction and operation of these components would be less than significant.

PG&E Utility Switchyard and Downstream Network Upgrades

The utility switchyard would result in the conversion of a parcel that contains approximately 99 acres designated as Prime Farmland and approximately 38 acres designated as Farmland of Statewide Importance to non-agricultural use. However, this Farmland, located within the WWD boundary, would be designated to be retired in compliance with SGMA with an estimated 500,000 additional acres of land in the San Joaquin Valley by approximately 2040.

Construction of the downstream network upgrades would not involve or require the conversion of agricultural land. The project does not include other elements or environmental effects that would result in the conversion of additional farmland or the conversion of Farmland to non-agricultural use or forest land to non-forest land. The impact associated with construction and operation and of these components would be less than significant.

5.8.2.3 Cumulative Impacts

A project impact would be considered cumulatively considerable if it would have the potential to combine with other past, present, or reasonably foreseeable projects in the area to become significant. Staff reviewed reasonable and proposed projects located within Fresno County for consideration in the cumulative effects analysis.

Appendix A, Table A-1 presents eleven projects that are similar to the proposed project and are in various stages planning, environmental review, or construction. Six projects have the potential to be constructed in the same timeframe of the proposed project and were considered in the cumulative impacts analysis:

- FC-9: Heartland Hydrogen Project, which is within 12.3 miles of the proposed project's solar facility and 3.7 miles east of Scenario 1 of the PG&E downstream network upgrades. The project is currently in environmental review by Fresno County.
- FC-13: Sonrisa Solar Project, which is located 10.4 miles northwest of the proposed project's solar facility and currently in review by the Fresno County Planning Commission.

- FC-15: Luna Valley Solar, which is 12.7 miles north of the proposed project's solar facility and 7.5 miles east of Scenario 1 of the PG&E downstream network upgrades. The project has been approved, but it is not yet under construction.
- FC-16: H2B2 USA, LLC project, which includes a solar and BESS and is located 14.4 miles north of the proposed project's solar facility. The project is in review by the Fresno County Planning Commission.
- FC-25: BayWa.r.e/Cornucopia Hybrid Solar Project, located 28 miles south of the proposed switchyard and 7.6 miles southwest of the Scenarios 2 and 3 of the PG&E downstream network upgrades. The project is under review by the Fresno County Planning Commission.
- FC-28: San Luis West Solar Project, located 22.6 miles south of the proposed project's solar facility and 0.6 miles east of Scenarios 2 and 3 of the PG&E downstream network upgrades. The project is currently in environmental review by Fresno County.

Although the timing of each project is uncertain, it is likely that at least two similar projects would be constructed concurrently with the proposed project, such as projects FC-9 and FC-28, which are also undergoing environmental review.

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, the project would not result in a cumulatively considerable impact on land use, agriculture, and forestry.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation Intertie Line

The six projects considered in the cumulative analysis are more than 10 miles away from the solar facility, battery energy storage system, step-up substation, O&M facility, and generation-intertie line, and neither construction nor operation of the project would affect access or activities of communities near those projects. As described in **Section 5.14, Transportation**, the proposed project would not conflict with programs, plans, ordinances or policies addressing the circulation system. Construction and operation of the project would include the use of approximately 480 acres designated as Prime Farmland and approximately 7,800 acres designated as Farmland of Statewide Importance for solar facility construction. Some farmlands would be removed to accommodate a right-of-way/easement for the generation-intertie line. These lands are no longer irrigated and are no longer considered Prime Farmland or farmland of statewide importance. WWD would retire the 9,100 acres associated with the solar facility from agricultural production in accordance with the existing Groundwater Sustainability Plan.

The proposed project would contribute to a less than significant loss of Prime Farmland in accordance with the SGMA and other state goals to retire impaired farmland. The six projects identified for the cumulative effects analysis would also require the use of

important farmland; however, the amount of farmland would remain within the goals of SGMA for farmland retirement by 2040. In addition, Fresno County General Plan Policy LU-A.23 requires mitigation for projects that convert 20 or more acres of important farmland and are not supportive/related to agricultural use unless the conversion occurs pursuant to a local groundwater plan (Fresno, 2024). The effects of the proposed project, when combined with the other projects included in the cumulative effects analysis, would not be cumulatively considerable.

Following the transfer of land to the applicant, WWD would subject the 9,100 acres associated with the solar facility to a non-irrigation covenant, meaning the land would be restricted from current and future irrigated agricultural use (Westlands Water District GSA and County of Fresno GSA-Westside 2022). This is consistent with Westlands goal of retiring 500,000 acres of agricultural land. Five of the six projects identified for the cumulative effects propose the construction and operation of solar facilities. While these projects may include land zoned for agricultural use or subject to Williamson Act contracts, Government Code Section 51238(a) generally deems linear facilities and electric utilities compatible with agricultural preserves unless a local board or council makes a finding to the contrary. Fresno County has not made such findings to date. The conversion of Prime Farmland would be considered acceptable under Government Code Section 51238(a)(1), and the retirement of farmland would be consistent with SGMA. Therefore, impacts of the proposed project would not be cumulatively considerable.

Operation of the proposed project and the projects included in the cumulative effects analysis is unlikely to create new jobs to the extent that additional housing, schools, parks, or other infrastructure; therefore, the potential for the proposed project or other projects to contribute to other changes in the existing environment resulting in the conversion of additional farmland or forest land is less than significant and not cumulatively considerable.

PG&E Utility Switchyard and Downstream Network Upgrades

The construction and operation of the utility switchyard would occupy 50 acres of a 139-acre parcel (IP 2024n, RCI 2023nn, Table 5.2-1). The utility switchyard would result in the conversion of a parcel that contains 99 acres designated by the FMMP as Prime Farmland and 38 acres designated as Farmland of Statewide Importance (RCI 2023nn, p. 5.2-68) that is anticipated for retirement in compliance with SGMA, which proposed the retirement of approximately 500,000 acres of farmland; therefore, the loss of 139 acres would be considered less than significant. Downstream network upgrades would be located in a disturbed area and would not result in the loss of important farmland. (RCI 2023nn). Cultivation would continue on land surrounding the easement. The proposed project would contribute a less than significant impact to the loss of important farmland and would comply with the SGMA goals of retiring 500,000 acres of farmland surrounding the easement by 2040. The proposed project would contribute a less than significant impact to the loss of important farmland and would comply with the SGMA goals of retiring 500,000 acres of farmland by 2040.

The utility switchyard would be located on a parcel that is subject to a Williamson Act contract. However, the utility switchyard is an electric facility considered to be compatible with an agriculture preserve (Government Code Section 51238(a)) unless a local board or council makes a finding to the contrary. Fresno County has not made such findings to date. Therefore, impacts of the utility switchyard and PG&E downstream network upgrades related to the conversion of farmland to non-agricultural uses or conflicts with Williamson Act contracts would not be cumulatively considerable.

5.8.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.8-4 below details staff's determination of conformance with applicable local and state LORS, including any proposed COCs, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concluded that the project would be consistent with all applicable LORS.

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
State	
California Lands Conservation Act (Williamson Act)	
Preserves agricultural land and encourages open space preservation and efficient urban growth.	Yes. Project components located on land subject to a Williamson Act contract would be compatible with uses of an agricultural preserve.
Government Code Section 51238(a)(1)	
Designates gas, electric, water, communication, and agricultural laborer housing facilities as compatible uses within any agricultural preserve.	Yes. The utility switchyard and gen-tie line are designated as electric facilities which is a compatible use with an agricultural preserve.
Sustainable Groundwater Management Act (SGMA)	
Requires groundwater management agencies to bring groundwater withdrawals into sustained yields over a 20-year period, which is anticipated to result in retirement of an estimated 500,000 acres of land in San Joaquin Valley from 2014 through 2040.	Yes. The majority of the project components would be sited on agricultural land being retired in accordance with SGMA requirements.
Local	
Sagoupe Settlement Agreement	
Requires land within the Project Area to be permanently retired from irrigated agriculture in compliance with a Court order settling claims of improper drainage services provided by the US Bureau of Reclamation.	Yes. Land within the Project Area is subject to retirement from agricultural use.
Fresno County General Plan	
Agriculture and Land Use Element	
Policy LU-A.13. The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses	Yes. A buffer of 50 feet will be provided between the proposed solar facility and sensitive users.

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
and proposed sensitive receptors when processing discretionary land use applications.	
Policy LU-A.14 The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.	Yes. The CEC's discretionary review authority under the Public Resources Code includes an assessment of agricultural land to non-agricultural use.
Policy LU-A-17/LUB.14. The County should accept Williamson Act contracts on all designated agricultural land subject to location, acreage, and use limitations established by the County provided that the County receives full subvention payment as partial replacement of local property tax revenue foregone as a result of participating in the Williamson Act program, All development uses and activities that occur on land under contract shall comply with the requirements of the California Land Conservation Act and adopted County Rules.	Yes. California Government Code, Section 51238 (a)(1), states that "Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve". The Project would not require the cancellation of Williamson Act contracts due to the compatibility of the Project as electric facilities under Government Code Section 51238. The Board has not made a finding to the contrary.
Policy LU-A.22, The County shall adopt and support policies and programs that seek to minimize the impact of reoccurring drought conditions on ground water supply and the agricultural industry.	Yes. The proposed solar facility would be developed on retired agricultural lands within the WWD.
<p>Policy LU-A.23. For discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the Farmland Mapping and Monitoring Program) to nonagricultural uses, the County shall consider and adopt feasible measures including, but not limited to:</p> <ul style="list-style-type: none"> • Acquisition of conservation easements at a 1:1 ratio for lands lost to nonagricultural uses. • Fee title of agricultural mitigation land that may be held by a third party or the County. • In lieu fees paid to the County that may be used to acquire future mitigation property. • Mitigation banks. <p>The County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan, or the project is for housing which is predominately for persons of low or moderate income as defined in section 50093 of the Health and Safety Code.</p>	Yes. The proposed project will be developed on retired farmland owned by WWD. Conversion is occurring pursuant to a local groundwater sustainability plan.

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Further, the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code.	
Policy LU-D.1 The County designates the land bordering I-5 for a lateral distance of one mile on both sides as Westside Freeway Corridor Overlay.	Yes. The proposed project is consistent with the Westside Freeway Corridor Overlay.
Policy LU-D.2 The County shall generally limit development at major or minor commercial interchanges to one-square mile of land centered on the freeway interchange structure.	Yes. The alternate gen-tie line is located within 1 square mile of the Interstate 5/Derrick Avenue interchange. The utility switchyard is partially within 1 square mile of the Interstate 5/Derrick Avenue interchange but would be partially located outside of the one-square mile boundary.
<p>LU-F.30. The County may approve rezoning requests and discretionary permits for new industrial development or expansion of existing industrial uses subject to conditions concerning the following criteria or other conditions adopted by the Board of Supervisors:</p> <ul style="list-style-type: none"> a. Operational measures or specialized equipment to protect public health, safety, and welfare, and to reduce adverse impacts of noise, odor, vibration, smoke, noxious gases, heat and glare, dust and dirt, combustibles, and other pollutants on abutting properties. b. Provisions for adequate off-street parking to handle maximum number of company vehicles, salespersons, and customers/visitors. c. Mandatory maintenance of non-objectionable use areas adjacent to or surrounding the use in order to isolate the use from abutting properties. d. Limitations on the industry's size, time of operation, or length of permit. e. Compliance with the Environmental Justice Element policies for proposals in proximity to sensitive receptors and/or disadvantaged communities. 	<p>Yes. The project is consistent with policy LU-F.30 based on the following:</p> <ul style="list-style-type: none"> a. As described in Section 3, Project Description, the project would include 50-foot buffers between proposed project structures and nearest sensitive receptors, and a 275-foot easement would accommodate the generation-intertie line. Staff-recommended COCs would be implemented during project operation to protect public health, safety, and welfare and combustibles to less than significant: COCs WORKER SAFETY-1 to WORKER SAFETY-12, as presented in Section 4.4, Worker Safety and Fire Protection; HAZ-1 to HAZ-9 as presented in Section 5.7, Hazards, Hazardous Materials, Waste, and Wildfire. Staff-recommended COC's AQ-SC1 to AQ-SC6 in Section 5.1, Air Quality, would reduce potential impacts associated with dust and dirt to less than significant, and COC VIS-1, as described in Section 5.15, Visual Resources, would reduce potential effects associated with glare to less than significant. No operational impacts were identified in association with noise and vibration, odor, or smoke and noxious gases, or other pollutants. As described in Section 5.16, Water Resources, on-site stormwater detention and treatment systems would be designed to limit stormwater-related erosion onto adjacent properties, consistent with County and State Regional Water Quality Control

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
	<p>Board, requirements and a Pest Management Plan would be implemented to minimize the likelihood of pests (including weeds and rodents) that could impact the project site and adjacent properties.</p> <p>b. As described in Section 3, Project Description, a maximum of 12 full-time employees is anticipated, with intermittent employees for repairs, maintenance, etc. The proposed project includes an off-street parking area adjacent to the O&M facility.</p> <p>c. As described in Section 3, Project Description, buffers and easements would be established to separate the facility from adjacent uses. On-site vegetation would be maintained.</p> <p>d. Section 3, Project Description, describes the size of the proposed facility that it would operate daily for 24 hours/day, and anticipates a 35-year operational horizon is identified. Should facility expansion be proposed, additional environmental review would be required.</p> <p>e. The proposed project complies with the EJ element as described in Section 6, Environmental Justice.</p>
Public Facilities and Services Element	
<p>Policy PF-E.9 The County shall require new development to provide protection from the 100-year flood as a minimum.</p>	<p>Yes. The Project would be constructed to provide protection from inundation in flood hazard areas, including the implementation of drainage facilities around the BESS site and installation of steel piles to support solar panels which would minimize the redirection of flood flows.</p>
<p>Policy PF-J.2. The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.</p>	<p>Yes. The County will work with CEC and the applicant by reviewing the environmental analyses conducted in association with the project.</p>
Open Space and Conservation Policies	
<p>Policy OS-A.1. 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.</p>	<p>Yes. The County will review the environmental analysis conducted in association with the project.</p>
<p>Policy OS-E.3 The County shall require development in areas known to have particular value for wildlife to be carefully planned and,</p>	<p>Yes. The Project would minimize impacts to wildlife.</p>

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
where possible, located so that the value of the habitat for wildlife is maintained.	
Policy OS-E.9 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 upon 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.	Yes. Field reconnaissance surveys of the Project site were conducted December 14-16, 2022, and March 31, 2023.
Policy OS-E.17 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.	Yes. The project site is not located in U.S. Fish and Wildlife Service-delineated critical habitat and the project would minimize potential impacts to special-status species.
Policy OS-L.3 The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles: <ol style="list-style-type: none"> 1. Timber harvesting within or adjacent to the right-of-way shall be limited to that which is necessary to maintain and enhance the quality of the forest; 2. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way; 3. Installation of signs visible from the right-of-way shall be limited to business identification signs, on-site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way; 4. Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right-of-way. Modification of the setback 	Yes. Of the bullet points in Policy OS-L.3, only bullet point (b) is applicable to the Project. The generation-intertie line would be located overhead across Interstate 5. Implementation of COC VIS-1 would reduce potential impacts related to color contrast and glare of the gen-tie line.

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
<p>requirement may be appropriate when any one of the following conditions exist:</p> <ol style="list-style-type: none"> 5. Topographic or vegetative characteristics preclude such a setback; <ul style="list-style-type: none"> • Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way; • Property dimensions preclude such a setback; • or Development proposal involves expansion of an existing facility or an existing concentration of uses. 6. Subdivision proposals shall be designed to minimize the number of right-of-way access drives; 7. Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and 8. Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscape plantings or artificial screens which harmonize with the natural landscape. 	
Health and Safety Element	
<p>Policy HS-D.8 The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.</p>	<p>Yes. The project would adhere to applicable regulations to minimize soil erosion.</p>
<p>Policy HS-D.11 In known or potential landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems, undercutting the bases of slopes, removal of vegetative cover, and steepening of slopes.</p>	<p>Yes. The project site is not in a known or potential landslide hazard area.</p>
<p>Policy HS-F.1 The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.</p>	<p>Yes. Project construction and operation would comply with the provisions of the Hazardous Material Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Materials Management Act, and California Code of Regulations Title 22.</p>
<p>Policy HS-F.2 The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.</p>	<p>Yes. The project Opt-In Application includes relevant information regarding hazardous material waste, recycling, and storage.</p>

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Policy HS-F.4 For redevelopment or infill projects or where past site uses suggest environmental impairment, the County shall require that an investigation be performed to identify the potential for soil or groundwater contamination. In the event soil or groundwater contamination is identified or could be encountered during site development, the County shall require a plan that identifies potential risks and actions to mitigate those risks prior to, during, and after construction.	Yes. See Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire.
Policy HS-G.1 The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.	Yes. The project would adhere to the noise requirements of the Fresno County General Plan.
Policy HS-H.4 So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where: a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to the Chart HS-9: "Land Use Compatibility for Community Noise Environments;" b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.	Yes. The project would adhere to the noise requirements of the Fresno County General Plan.
Policy HS-G.5 Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the project.	Yes. The project would adhere to the noise requirements of the Fresno County General Plan.
Policy HS-H.6 The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.	Yes. The project would adhere to the noise requirements of the Fresno County General Plan.
Policy HS-H.8 The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land Use Compatibility for Community Noise Environments."	Yes. The project would adhere to the noise requirements of the Fresno County General Plan.

TABLE 5.8-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
County of Fresno Zoning Ordinance	
Establishes zoning districts governing land use and the placement of buildings and district improvements.	Yes. The project would be an allowable use in accordance with the findings required for an Unclassified Conditional Use Permit.
Chapter 842.5, Conditional Use Permits.	Yes. The proposed project is identified as a land use that is eligible for an Unclassified Conditional Use Permit under 842.5.020(B)(14).
Section 842.5.050 (B) Required findings. Identifies the findings required for approval of a Conditional Use Permit and identifies utility-scale solar projects as following the approval of an Unclassified Conditional Use Permit.	Yes. Section 842.5.050.B identifies required findings for conditional use permits. Staff reviewed the proposed project and determined that the project is consistent with the required findings following the staff proposed COCs identified for project construction and operation including: WORKER SAFETY-1 to WORKER SAFETY-12 in Section 4.4, Worker Safety and Fire Protection , COCs HAZ-1 to HAZ-9 in Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire , COCs AQ-SC1 to AQ-SC6 in Section 5.1, Air Quality , and COC VIS-1 in Section 5.15, Visual Resources .

5.8.4 Conclusions and Recommendations

As discussed above, with incorporation of COCs for Air Quality, Hazards, Hazardous Materials/Waste, and Wildfire, Visual Resources, Worker Safety and Fire Protection, the project would have a less than significant impact related to land use, agriculture, and forestry. Additionally, the project would conform with applicable LORS.

5.8.5 Proposed Conditions of Certification

There are no recommended conditions of certification for land use, agriculture, and forestry.

5.8.6 Recommended Mitigation Measures

There are no recommended mitigation measures for land use, agriculture, and forestry.

5.8.7 References

Aera Energy, LLC. 2020. Planning Agreement by and among Aera Energy LLC, the California Department of Fish and Wildlife, the United States Fish and Wildlife Service, and the California Department of Conservation (DOC) regarding the Aera Energy Southwest San Joaquin Valley Habitat Conservation Plan & Natural Community Conservation Plan. NCCP Planning Agreement No. 2810-2020-001-04. February 2020. Accessed online at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=177422>

DOC 2023a – California Department of Conservation (DOC). Status of Confined Animal Agriculture Facilities in Important Farmland. GIS Data. Accessed online at:

- https://www.conservation.ca.gov/dlrp/fmmp/Documents/CI_in_Local_Definitions.pdf
- DOC 2023b – California Department of Conservation (DOC). DOC Maps: Mines and Mineral Resources. Accessed in August 2023. Accessed online at: <https://maps.conservation.ca.gov/mineralresources/>
- DOC 2022 – California Department of Conservation (DOC). The Williamson Act Status Report 2020-21. May 2022. Accessed online at: https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2022%20WA%20Status%20Report.pdf
- California Department of Conservation (DOC) 2021 – FMMP – Rural Land Mapping Project. Accessed online at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/rural_land_mapping.aspx
- California Department of Transportation (Caltrans) 2018 – California State Scenic Highway Map. Accessed online at: <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca>
- California Government Code, 2000. Government Code, Title 5, Division, Part 1, Chapter 7, Agricultural Land, Article 2.5, Agricultural Preserves, Section 51238. Accessed online at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=51238.&lawCode=GOV
- California Natural Resources Agency 2020 – Statewide Crop Mapping. Accessed online at: <https://data.cnra.ca.gov/dataset/statewide-crop-mapping>
- CEQAnet 2021– Governor’s Office of Land Use and Climate Innovation, CEQAnet database. Scarlet Solar Energy Project (EIR No. 7230). May 2021. Accessed online at: <https://ceqanet.opr.ca.gov/2018091022/2>
- FCOG 2020 – Fresno County Council of Governments (FCOG). Fresno County 2019-2050 Growth Projections. Dated October 29, 2020. Accessed online at: https://fresnocog.wpenginepowered.com/wp-content/uploads/2021/03/Fresno-COG-2019_2050-Projections-Final-Report-102920.pdf
- Conservation Biology Institute 2015 – Fresno County Williamson Act Parcels. Accessed online at: <https://databasin.org/datasets/6871c77c876d421b985b1b70ee1640f5/>
- IP 2025b – Intersect Power (TN 261490). Updated Land Use Figures. Dated January 31, 2025. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Fresno 2023a – Fresno County General Plan Background Report. Accessed online at: <https://www.fresnocountyca.gov/files/sharedassets/county/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgr-background-report-2023-05-10.pdf>
- Fresno 2023b – Fresno County GIS Portal. Accessed online at: <https://gisportal.co.fresno.ca.us/portal/home/index.html>

- Fresno 2023c – Fresno County Public Works and Planning Division. Solar Facilities Guidelines. Accessed online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities-p-1583/photo-voltaic-facilities-p-1621>
- Fresno 2024a – Fresno County General Plan Policy Document. General Plan Review and Revision. Final. February 2024. Accessed in February 2024 and July 2024. Accessed online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- Fresno 2024b – Fresno County Zoning Ordinance, Chapter 806.2. Version December 10, 2024. Accessed in February 2025. Accessed online at: https://library.municode.com/CA/Fresno_County/codes/code_of_ordinances
- Fresno 2024c – County of Fresno Action Summary, Final. Board of Supervisors Meeting. December 17, 2024. Accessed online at: <https://fresnocounty.legistar.com/View.ashx?M=M&ID=1122173&GUID=CBB6B44D-047D-431E-8AD2-EE6F25AB6D19>
<https://fresnocounty.legistar.com/View.ashx?M=M&ID=1122173&GUID=CBB6B44D-047D-431E-8AD2-EE6F25AB6D19>
- Fresno 2025 – Fresno County Public Works and Planning Division. Conditional Use Permit. Accessed in February 2025. Accessed online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/land-use-applications/cup#:~:text=The%20Fresno%20County%20Zoning%20Ordinance%20requires%20a%20Conditional,requires%20a%20public%20hearing%20before%20the%20Planning%20Commission>
- Public Policy Institute of California (PPIC) – Managing Water and Farmland Transitions in the San Joaquin Valley. Accessed online at: <https://www.ppic.org/publication/managing-water-and-farmland-transitions-in-the-san-joaquin-valley/>
- RCI 2023b – Rincon Consultants, Inc. (TN 252918). Appendix A Property Owner Information. Dated November 3, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ee – Rincon Consultants, Inc. (TN 252984). Chapter 1 Executive Summary. Dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023nn – Rincon Consultants, Inc. (TN 253034). Section 5-2 Land Use. Dated November 7, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- University of California Berkeley 2016 – A Path Forward Identifying Least-Conflict Solar PV Development in California’s San Joaquin Valley. May 2016. Accessed online

at: <https://www.law.berkeley.edu/wp-content/uploads/2016/05/A-PATH-FORWARD-May-2016.pdf>

United States District Court for the Eastern District of California 2015 – Federal Defendants’ Notice of Filing Settlement Agreement Case No. CV-F-88-634-LJO/DLB and CV-F-91-048-LJO/DLB. Accessed online at: <https://www.usbr.gov/mp/docs/Notice-of-Filing-Settlement-Agreement-AS-FILED-with-attachment-091615.pdf>

Westlands Water District 2023 – Water Supply. Accessed September 2023. Accessed online at: <https://wwd.ca.gov/water-management/water-supply/>

Westlands Water District 2017. Westlands Solar Park and Gen-Tie Corridors Plan Draft PEIR., 3.2 Agricultural Resources. October 2017. Accessed online at: https://cs.westlandswater.org/resources/resources_files/misc/Environmental_Docs/201710/3-2-WSP-DraftPEIR-AgriculturalResources-Oct-2017.pdf

Westlands Water District 2015. Agreement Between the United States and Westlands Water District. Settled Agreement August 2015. Accessed online at: <https://wwd.ca.gov/wp-content/uploads/2015/09/dsA.pdf>

Westlands Water District GSA and County of Fresno GSA-Westside 2022. Westside Subbasin Groundwater Sustainability Plan (GSP). Accessed online at: <https://sgma.water.ca.gov/portal/service/gspdocument/download/1979>

5.9 Noise and Vibration

5.9.1 Environmental Setting

Existing Conditions

The Darden Clean Energy Project (DCEP or project) area consists primarily of retired agricultural land use with some limited active agricultural land use (RCI 2023r, Section 1.2). The project would be located on approximately 9,500 acres (IP 2024n).

The project is located between South Sonoma Avenue to the west and South Butte Avenue to the east, with the gen-tie line extending from the intersection of South Sonoma Avenue and West Harlan Avenue to a new utility switchyard located on the west side of Interstate 5 (RCI 2023ff, Section 2.1.1). The nearest cluster of residences is located adjacent to the project boundary along South Napa Avenue, represented by R-13 (RCI 2023u, Section 5.3.3.2). The predominant ambient noise sources include traffic on South Sonoma Avenue and West Mount Whitney Avenue, wind, and agricultural activities (RCI 2023u, Section 5.3.1.2).

A 24-hour long-term ambient noise monitoring survey was conducted from April 24th to April 25th, 2023, at LT-1, which is adjacent to the cluster of residences near the project site along South Sonoma Avenue, represented by R-8. Furthermore, a 25-hour survey was conducted from July 18th to July 19th, 2023, at LT-2, which is located at the intersection of South Sonoma Avenue and West Harlan Avenue (RCI 2023u, Section 5.3.1.3, and Figure 5.3-2). The average ambient sound levels measured at LT-1 and LT-2 during daytime hours (7:00 A.M. to 10:00 P.M.) were approximately 54 and 53 decibels on the A-weighted scale (dBA) L_{eq}^1 , respectively. During nighttime hours (10 P.M. to 7 A.M.), the average ambient sound levels measured at LT-1 and LT-2 were approximately 46 and 53 dBA L_{eq} , respectively (RCI 2023u, Section 5.3.1.3). In addition, short-term noise measurements were conducted at six locations around the property boundary and within the project site on April 25th, 2023. The measurements were taken during daytime hours at intervals of 15 minutes each. The short-term noise levels ranged from 53 dBA L_{eq} at the northeast of the project's property line and the south-southwest side within the project's property line, to 67 dBA L_{eq} at the southwest area outside of the project boundary (RCI 2023r, Section 2.2, Figure 4).

Regulatory

Federal

Occupational Safety and Health Act (OSHA). The Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. Section 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of

¹ L_{eq} is a measurement of average energy level intensity of noise over a given period of time.

the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

State

Cal-OSHA. Cal-OSHA has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, Section 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards.

Local

Fresno County General Plan

Noise Element. The Noise Element includes guidelines for noise-compatible land use categories (Fresno 2024a). The guidelines include the County's Land Use Compatibility for Community Noise Environments table, which identifies ranges of noise levels for a variety of land use categories and development types and classifies them as: Normally Acceptable, Conditionally Acceptable, Generally Unacceptable, or Land Use Discouraged. The County's Land Use Compatibility for Community Noise Environments table is recreated below in **Table 5.9-1** below.

The General Plan also includes several policies that aim to protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels. The following are General Plan policies applicable to the project:

- HS-H.1: The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.
- HS-H.4: So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:
 - a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to "Land Use Compatibility for Community Noise Environments" (as reproduced in **Table 5.9-1**).
 - b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.
- HS-H.5: Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and projects design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as sound walls, as a means of achieving the noise standards

after other design-related noise mitigation measures have been evaluated or integrated into the projects.

- HS-H.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.
- HS-H.8: The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to "Land Use Compatibility for Community Noise Environments" (as reproduced in **Table 5.9-1**).

TABLE 5.9-1 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use	Normally Acceptable² (L_{dn}³ or CNEL⁴)	Conditionally Acceptable⁵ (L_{dn} or CNEL)	Generally Unacceptable⁶ (L_{dn} or CNEL)	Clearly Unacceptable⁷ (L_{dn} or CNEL)
Residential – Low Density Single-family, Duplex, Mobile Homes	50-60	55-65	65-75	75-85
Residential – Multiple Family	50-60	55-65	65-75	75-85
Transient Lodging – Motels, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-60	55-65	65-75	75-85
Auditoriums, Concert Halls, Amphitheaters	—	50-70	—	65-85
Sports Arena, Outdoor Spectator Sports	—	50-75	—	70-85
Playgrounds, Neighborhood Parks	50-70	—	67.5-75	72.5-85
Playgrounds, Neighborhood Parks	50-75	70-77.5	—	80-85
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	75-85	—

2 Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

3 L_{dn} or Day Night Average is an average 24-hour noise measurement that factors day and night noise levels.

4 CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.

5 Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

6 Generally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

7 Land Use Discouraged: New construction or development should generally not be undertaken.

TABLE 5.9-1 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use	Normally Acceptable² (L_{dn}³ or CNEL⁴)	Conditionally Acceptable⁵ (L_{dn} or CNEL)	Generally Unacceptable⁶ (L_{dn} or CNEL)	Clearly Unacceptable⁷ (L_{dn} or CNEL)
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	—

Fresno County Ordinance

Chapter 8.40 (Noise Control). This Fresno County Noise Ordinance includes noise measurement criteria, exterior noise standards, and noise source exemptions. Section 8.40.040 of the Noise Ordinance establishes noise regulations for single-family and multi-family residences, schools, hospitals, churches, and public libraries in both incorporated and unincorporated areas of Fresno County (Fresno 2024b). The County's Exterior Noise Level Standards for different cumulative number of minutes in any one-hour time period are shown in **Table 5.9-2** below. The mentioned Standards apply within 50 feet of the affected sensitive receptors.

TABLE 5.9-2 FRESNO COUNTY EXTERIOR NOISE LEVEL STANDARDS (DBA)

Category	Cumulative Number of minutes in any one-hour time period	Noise Level Standards, dBA	
		Daytime 7 A.M. to 10 P.M	Nighttime 10 P.M. to 7 A.M.
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	50

According to the County's Noise Ordinance, if the measured ambient noise level exceeds the applicable noise level standard in any category above (**Table 5.9-2**), the applicable standard shall be adjusted to equate the ambient noise level. Each of the noise level standards specified above shall be reduced by five dBA L_{eq} for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

The following activities are exempt from County's Noise Ordinance applicable to the project:

- Noise sources associated with construction, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on weekdays, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday; or

- Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.

Cumulative

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The CEQA Guidelines require that the discussion reflect the severity of the impacts and the likelihood of their occurrence but need not provide as much detail as the discussion of the impacts attributable to the project alone.

Pursuant to CEQA, a cumulative impacts analysis can be performed by either 1) summarizing growth projections in an adopted general plan or in a prior certified environmental document, or 2) compiling a list of past, present, and probable future projects producing related or cumulative impacts. The second method has been utilized for the purposes of this staff assessment. However, the DCEP would have no cumulative noise impacts with past, present, or probable future projects, because there are no other projects located within a distance where their noise could combine with that of the DCEP to create a cumulative impact (this distance is typically one mile) (**Appendix A, Table A-1**).

5.9.2 Environmental Impacts

NOISE AND VIBRATION	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, noise.

5.9.2.1 Methodology and Thresholds of Significance

The construction and operation of any power plant and large industrial facilities create noise, or undesired sound. The character and loudness of this noise, the times of day or night that it occurs, and the proximity of the facility to sensitive receptors (humans) combine to determine whether the facility would meet applicable noise control laws and ordinances, and whether it would cause significant adverse environmental impacts.

In addition, vibration may be produced as a result of construction practices, such as blasting or pile driving. The ground-borne energy of vibration has the potential to cause structural damage and annoyance to humans.

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The California Environmental Quality Act (CEQA) Guidelines state that a project would normally be considered to have a significant impact if noise levels conflict with adopted environmental standards or plans (County's noise level threshold), or if noise levels generated by the project would substantially increase existing ambient noise levels at noise-sensitive receivers on a permanent or temporary basis.

Thresholds of Significance

Generally, an increase of 3 dBA is noticeable and an increase of 5 dBA is distinct. Other factors, such as the frequency of occurrence of the noise and time of day/night it occurs, are also commonly considered in determining if such an increase is clearly significant or not.

There are no adopted thresholds for an increase in dBA level to be considered a significant impact for construction activities. Noise due to construction activities are considered to be less than significant if the construction activity is temporary and the use of heavy equipment and noisy activities is limited to daytime hours. However, an increase of 10 dBA or more during the day can be perceived as noisy (triggering a community reaction) and warrant additional measures to address the noise levels. An increase of 10 dBA corresponds to a doubling of loudness or dBA level and is generally considered to be the starting point at which significant noise impacts may occur (triggering a community reaction). It is very difficult to identify the exact level of noise resulting from construction because it fluctuates based on many factors over the course of a week, day, or even hour. It also depends on other factors, such as intervening structures, land topography and land cover. For example, intervening structures block or impede sound waves, and undulating topography and land roughness would play a role in attenuating the propagation of noise waves. Therefore, performance standards (i.e., a complaint and redress process) are ultimately used as a backstop measure to address any impacts that are perceived by the community.

Fresno County General Plan Noise Element establishes noise level thresholds and noise limitations for new projects.

In September 2013, the California Department of Transportation (Caltrans) released the Transportation and Construction Vibration Guidance Manual. This manual includes the Federal Transit Administration's (FTA) methods and findings. The Caltrans manual states that for construction activities that generate vibration, the threshold of human response begins at a peak particle velocity (PPV) of 0.16 inch per second (in/sec). This is characterized by Caltrans as a "distinctly perceptible" event with an incident range of transient to continuous (Caltrans 2013). A level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

5.9.2.2 Direct and Indirect Impacts

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction— Less Than Significant with Mitigation Incorporated

Based on the analysis below, construction of the project would have a less than significant impact on ambient noise levels in the vicinity of the project with the discussed mitigation measures incorporated.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The Fresno County General Plan does not establish noise level thresholds for construction activities. However, the County's Noise Ordinance exempts construction activities occurring between 6:00 A.M. and 9 P.M. on weekdays and between 7:00 A.M. and 5:00 P.M. on weekends, from its noise level standards. The project has proposed that construction activities would occur on-site between the hours of 6:00 A.M. and 7:00 P.M. on weekdays and between 7:00 A.M. and 5:00 P.M. on weekends (RCI 2023u, Section 5.3.3.2).

Construction activities for the project would occur in several phases and take approximately 18 to 36 months to complete (RCI 2023r, Section 1.3, and Section 1.4). The construction phases include:

- site preparation
- photovoltaic (PV) panel system installation
- battery energy storage system (BESS) facility construction
- and step-up substation construction.

The project would utilize helicopters during the inverters, transformers, substation and gen-tie construction. Pile driving is anticipated to be used during site preparation and construction of the PV and BESS facilities (RCI 2023u, Section 5.3.3.2).

Construction activities would likely utilize equipment that could generate noise levels that exceed ambient noise, such as concrete mixer trucks, cranes, and pneumatic tools. Construction equipment typically produces noise levels between 74 dBA L_{eq} (i.e., flatbed truck and welder/torch) and 104 dBA L_{eq} (pile driving) at 50 feet.

Of the two major phases of construction, PV facility, and BESS facility, the PV system would be closest to the project's sensitive receptors (residences). The PV panel system construction phase would generate the highest construction noise level at any sensitive receptor. The noise level at the nearest residences to the PV panel system construction activity, located at R-13, would reach 80 dBA L_{eq} (RCI 2023u, Section 5.3.3.2, Table 5.3-11, and Section 5.3.1.2, Figure 5.3-1). This is 26 dBA above the existing ambient noise level at R-13. The noise level at both R-8 and the cluster of residences located adjacent to the project boundary along West Mount Whitney Ave, represented by R-5, would reach 75 dBA L_{eq} . This is 21 dBA above the existing ambient noise level at R-8 and 22 dBA above the existing ambient noise level at R-5.

Since the increases at these residential receptors are all well above 10 dBA, their impacts would be significant. For example, an increase of 20 dBA equates to a four-fold increase in the existing ambient noise levels. Even though these loudest construction activities would be intermittent and temporary, they could create annoyance to nearby residential receptors, especially for prolonged periods of time, and early morning hours when people may still be asleep (as early as 6:00 A.M. and extending to 9:00 P.M. as specified in the County's Noise Ordinance). Therefore, to reduce noise disturbance for sensitive receptors, staff proposes Condition of Certification (COC) **NOISE-6** to further limit construction hours for construction work within 1,000 feet of any residences.

Helicopters would be used during inverters, transformers, substation, and gen-tie construction, primarily for wire stringing activities including hanging travelers, pulling conductor and optical ground wire, dead-end activities, and the installation of bird diverters (RCI 2023ff, Subsection 2.3.4). Helicopter overflights could produce noise levels of approximately 96 dBA at 100 feet (RCI 2023u, Subsection 5.3.3.2). Helicopter flight paths are expected to be more than 700 feet to the nearest sensitive receptor, located at R-13. At this location, the helicopter could generate 79 dBA—approximately 25 dBA above the average daytime ambient noise level. To address this, the applicant has proposed mitigation measures, including minimizing helicopter use to a temporary two-month period and limiting operations to typical construction hours, Monday through Friday from 6:00 A.M. to 7:00 P.M. (RCI 2023ff, Subsection 2.3.4). COC **NOISE-6** limits helicopter operation to Monday through Friday from 6:00 A.M. to 7:00 P.M.

Pile driving activity could potentially occur during the site preparation, PV panel system installation, and BESS facility construction phases. Typically, pile driving is infrequent and of short duration. Pile driving noise is intermittent and not continuous throughout

the day. Unsilenced pile driving would generate the highest noise level for a single piece of construction equipment—104 dBA L_{eq} at 50 feet. The nearest residences to the pile driving activities are located at R-8, approximately 63 feet away.

At R-8, the noise level from pile driving (104 dBA L_{eq} at 50 feet) would be 102 dBA L_{eq} . The daytime ambient noise level at R-8 is 54 dBA L_{eq} . This ambient noise level would increase by up to 48 dBA L_{eq} . This is a significant increase, however, pile driving activities would be intermittent and temporary.

Staff proposes COC **NOISE-7** to ensure noise from pile driving would not substantially increase the existing ambient noise levels at R-8. As outlined in **NOISE-7**, this can be achieved by implementing several best management methods that are available for reducing noise and vibration generated by traditional pile driving. These methods include: (1) the use of pads or impact cushions of plywood; (2) dampened driving, which involves some form of blanket or enclosure around the hammer; and (3) the use of vibratory drivers or hydraulic pile pushers instead of impact drivers.

Furthermore, to address additional noise impacts that might be perceived noisy by the community, staff proposes COC **NOISE-1** through **NOISE-3**, **NOISE-5**, and **NOISE-6**. These conditions would provide the public with notification of construction, and noise complaint and redress process (**NOISE-1** and **NOISE-2**), would require construction workers and employees noise protection (**NOISE-3** and **NOISE-5**), and would place restrictions on construction activities (**NOISE-6**).

With implementation of COC **NOISE-1** through **NOISE-3**, **NOISE-5** through **NOISE-7**, project construction activities would not result in generation of a substantial increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies and would not create a significant adverse noise impact.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction activities for the PG&E utility switchyard would take approximately 180 to 200 days to complete (RCI 2023ff, Section 2.3). There are no noise-sensitive receptors within the vicinity of the proposed location of this switchyard and therefore, construction activities would create no impact on ambient noise levels.

Operation— Less Than Significant Impact

Based on the analysis below, operation of the project would have a less than significant impact on ambient noise levels in the vicinity of the project.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The proposed project and its linear facilities would consist of a PV facility, a BESS, a step-up substation, a gen-tie line (RCI 2024k, Section 3.1.1).

The County's General Plan along with the County Noise Ordinance (Section 8.40.040) establish noise level performance standards to control noise. The General Plan includes policies aimed at the potential noise impact of new construction or development near residences and other land use types (Fresno 2024a). The General Plan's noise level limit for residential, schools, libraries, churches, hospitals, and nursing homes land uses is 60 dBA L_{dn} . For a constant L_{dn} sound level during nighttime hours, 10 dBA is subtracted to convert that sound level to the L_{eq} sound metric. Following this principle, the County's General Plan's noise level limit for residential, schools, libraries, churches, hospitals, and nursing homes land uses is 50 dBA L_{eq} during nighttime hours and 60 dBA L_{eq} during daytime hours.

According to the County Noise Ordinance (Fresno 2024b), the Exterior Noise Level Standards for a cumulative 30 minutes in any one-hour time period is 45 dBA L_{50} ⁸ during nighttime hours and 50 dBA L_{50} during daytime hours. Therefore, because the County Noise Ordinance's limit during both daytime hours and nighttime hours are lower than that of the County's General Plan, staff uses the County Noise Ordinance's limits to evaluate the project's operational noise levels at the adjacent noise-sensitive receptors.

The concurrent operation of the PV, BESS, O&M, and substation facilities would result in a combined operational noise level of 35 dBA L_{eq} at the cluster of residences represented by R-13. The nighttime ambient noise level at R-13 is 50 dBA L_{eq} . The operational noise level of 35 dBA L_{eq} at R-13 would be below both the ambient noise level and the County Noise Ordinance's threshold. The operational noise levels at the cluster of residences represented by R-8 would be 31 dBA L_{eq} . The nighttime ambient noise level at R-8 is 46 dBA L_{eq} . The operational noise level of 31 dBA L_{eq} at R-8 would be below both the ambient noise level and the County Noise Ordinance's threshold. The operational noise levels at the cluster of residences represented by R-5 would be 24 dBA L_{eq} . The nighttime ambient noise level at R-5 is 53 dBA L_{eq} . The operational noise level of 24 dBA L_{eq} at R-5 would be below both the ambient noise level and the County Noise Ordinance's threshold.

During the day, the PV facility converts sunlight into electricity, which powers the grid and charges the BESS. Both the PV facility and the BESS could operate during the daylight hours, but only the BESS would be able to operate during the nighttime hours (from sunset to sunrise). Therefore, staff proposes COC **NOISE-4** to ensure project operation during both daytime and nighttime hours would not distinctly increase the ambient noise level at R-13 and would comply with the county's noise thresholds.

NOISE-4 would ensure measurement and verification that operational noise performance criteria are met at the project's noise sensitive receptors.

With implementation of COC **NOISE-4** project operations would not result in generation of a substantial increase in ambient noise levels in the vicinity of the project

⁸ L_{50} is the A-weighted noise levels that are exceeded 50 percent of the time during the measurement period.

in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies and would not create a significant adverse noise impact.

PG&E Utility Switchyard and Downstream Network Upgrades

There are no noise-sensitive receptors within the vicinity of the proposed location of this switchyard, and therefore, operation activities would create no impact on ambient noise levels.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction– Less Than Significant Impact

Based on the analysis below, construction of the project would have a less than significant impact on groundborne vibration and groundborne noise levels in the vicinity of the project.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Pile driving would generate the most project construction vibration (RCI 2023r, Section 3.3). This analysis relies on the vibration thresholds identified by Caltrans to determine the significance of vibration impacts related to adverse human reactions. The threshold of human response begins at a PPV of 0.16 in/sec. Caltrans characterizes this as a "distinctly perceptible" event (Caltrans 2013). A level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

Jackhammers can cause a groundborne vibration rate of 0.035 in/sec at 25 feet (less than the threshold of human response), and pile drivers can cause a groundborne vibration of 0.65 in/sec at 25 feet (Caltrans 2013). However, vibration rates dissipate rapidly with distance. Pile driving activities during site preparation and the construction of the PV panel system may take place within 63 feet of the closest off-site residential structure. At 63 feet, the vibration would be 0.16 in/sec, and therefore, it would not exceed the threshold of human response and would be below the level to cause annoyance to people in buildings and pose a risk of architectural damage to buildings.

PG&E Utility Switchyard and Downstream Network Upgrades

There are no vibration-sensitive receptors within the vicinity of the proposed location of this switchyard or the downstream network upgrade sites, and therefore, construction activities would create no impact on groundborne vibration and groundborne noise levels.

Operation— *No Impact*

Based on the analysis below, operation of the project would have no impact on groundborne vibration and groundborne noise levels in the vicinity of the project.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operational components of the project would not generate perceptible vibration levels. Most equipment used in Solar Facility, BESS, Step-Up Substation, O&M Facility, and Generation-Intertie Line are designed to produce no or very low vibration levels (less than the threshold of human response). Therefore, the operation of the project would not result in any substantial vibration.

PG&E Utility Switchyard and Downstream Network Upgrades

There are no vibration-sensitive receptors within the vicinity of the proposed location of this switchyard or the downstream network upgrade sites, and therefore, operation activities would create no impact on groundborne vibration and groundborne noise levels.

- c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

Construction and Operation— *No Impact*

Based on the analysis below, the project is not within the vicinity of a private airstrip or airport land use plan and is not within two miles of a public airport or public use airport. Therefore, the project would have no impacts from excessive noise levels.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The nearest airport to the project site is the San Joaquin Airport, located approximately 5.5 miles northeast of the nearest project site. The airport is too far from the project site to result in exposure of people residing or working in the project area to excessive noise levels.

PG&E Utility Switchyard and Downstream Network Upgrades

The nearest airport to the project site is the Harris Ranch Airport, located approximately 15 miles southeast of the PG&E utility switchyard and downstream network upgrades. The airport is too far from the locations of this switchyard and downstream network upgrades to result in exposure of people residing or working in the area to excessive noise levels.

5.9.2.3 Cumulative Impacts

Construction and Operation— *No Impact*

There are no cumulative projects close enough to the DCEP that when combined with the DCEP would result in cumulative noise and vibration impacts.

5.9.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.9-2 below details staff's determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.9-2 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Federal	
Occupational Health and Safety Act (OSHA) Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95	Yes. With incorporation of COC NOISE-3 and NOISE-5 requiring a employee noise control program and occupational noise survey.
State	
Cal-OSHA Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95	Yes. With incorporation of COC NOISE-3 and NOISE-5 requiring an employee noise control program and occupational noise survey.
Local	
Fresno County General Plan Noise Element, Land Use Compatibility for Community Noise Environments	Yes. With incorporation of COC NOISE-1 through NOISE-7 requiring a noise complaint process, employee noise control program, operational noise restrictions, occupational noise survey, construction noise restrictions, and pile driving control
Fresno County Noise Ordinance Chapter 8.40, Section 8.40.040 of the Noise Ordinance Noise Regulations	Yes. With incorporation of COC NOISE-1 through NOISE-7 requiring a noise complaint process, employee noise control program, operational noise restrictions, occupational noise survey, construction noise restrictions, and pile driving control

5.9.4 Conclusions and Recommendations

As discussed above, with the implementation of conditions of certification, the jurisdictional project components would have a less than significant impact related to noise and vibration and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.9.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the

CEC's certificate for the portions of the project constituting the site and related facilities.

There are no impacts associated with non-jurisdictional project components, as there are no sensitive receptors close enough to these components to be impacted, therefore no mitigation measures are recommended.

5.9.5 Proposed Conditions of Certification

NOISE-1 Prior to the start of ground disturbance, the project owner shall notify residences in the vicinity of the project site, by mail, or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction, and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This or a similarly effective telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: At least 15 days prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site and shall provide that telephone number.

NOISE-2 Noise Complaint Process. Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise ⁹_{OBJ}. The project owner or its authorized agent shall:

- use the Noise Complaint Resolution Form (shown below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to the noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours;
- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all feasible measures to reduce the source of the noise; and
- submit the Noise Complaint Resolution Form to the CPM documenting the complaint and actions taken. The form shall include: a complaint summary,

⁹ A project-related noise complaint is a complaint about noise that is caused by the project as opposed to another source and may constitute a violation by the project of any noise condition of certification, which is documented by an individual or entity affected by such noise.

including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant that states that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file with the CPM the Noise Complaint Resolution Form, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within three business days, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 Employee Noise Control Program. The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance with Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.

NOISE-4 Operational Noise Restrictions. The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project at R-8 and R-13 will not cause noise levels due to power plant operation to exceed 54 dBA L_{eq} (existing daytime ambient levels at both locations) during the hours of 7:00 A.M. to 10:00 P.M.

The project design and implementation shall also ensure that noise levels will not exceed the existing nighttime ambient levels of 46 dBA L_{eq} at R-8 and 50 dBA L_{eq} at R-13 during the hours of 10:00 P.M. to 7:00 A.M.

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

When the project first achieves a sustained output of 85 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at R-8 and R-13. This survey during power plant operation shall also include measurement of one-third octave band sound pressure levels at the above locations to ensure that no new pure-tone noise components have been introduced.

If the results from the noise survey indicate that the power plant noise levels (L_{eq}) at the affected receptors exceed the above value for any given hour during

the survey, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

If the results from these noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 45 days of the project first achieving a sustained output that produces the highest noise level. Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 Occupational Noise Survey. Following the project's attainment of a sustained output that produces the highest noise level, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas within the power plant.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, Sections 5095-5099 and Title 29, Code of Federal Regulations, Section 1910.95(g)(3). The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures to be employed in order to comply with the above regulations.

Verification: Within 30 days after completing each survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to Cal-OSHA upon request from Cal-OSHA.

NOISE-6 Construction Noise Restrictions. Heavy¹⁰ construction work relating to any project features, including linear facilities and pile driving, further than 1,000 feet from any residences, shall be restricted to the times delineated below:

Mondays through Fridays:	6:00 A.M. to 9:00 P.M.
Saturdays and Sundays:	7:00 A.M. to 5:00 P.M.

¹⁰ "Noisy" means noise that has the potential to cause project-related noise complaints (for the definition of "project-related noise complaint", see the footnote in condition of certification NOISE-2)

Heavy equipment operation and noisy construction work relating to any project features within 1,000 feet of any residences shall be restricted to only the times delineated below:

Mondays through Fridays:	7:00 A.M. to 7:00 P.M.
Saturdays and Sundays:	7:00 A.M. to 5:00 P.M.

Helicopter operation shall be restricted to only the times delineated below:

Mondays through Fridays:	6:00 A.M. to 7:00 P.M.
--------------------------	------------------------

Construction work, including helicopter overflight and pile driving activity, shall be performed in a manner to ensure excessive noise (noise that draws a project-related complaint) is prohibited and the potential for noise complaints is reduced as much as practicable. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers and other state-required noise attenuation devices. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use (jake braking) shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

NOISE-7 Pile Driving Control. The project owner shall perform pile driving in a manner to reduce the potential for any project-related noise and vibration complaints. The project owner shall notify residences in the vicinity of pile driving prior to start of these activities.

Verification: At least 15 days prior to first pile driving, the project owner shall submit to the CPM a description of the pile driving technique to be employed, including calculations showing its projected noise impacts and peak particle velocity at monitoring locations R-5, R-8, and R-13. Examples of noise-reducing techniques include: (1) the use of pads or impact cushions of plywood; (2) dampened driving, which involves some form of blanket or enclosure around the hammer; and (3) the use of vibratory drivers or hydraulic pile pushers instead of impact drivers.

At least 10 days prior to first production pile driving, the project owner shall notify residences in the vicinity of the project. The notification may be in the form of letters, or other effective means, as approved by the CPM. In this notification, the project owner shall state that it will perform this activity in a manner to reduce the potential for any project-related noise and vibration complaints.

5.9.6 Recommended Mitigation Measures

There are no recommended mitigation measures for the non-jurisdictional components of the project for Noise and Vibration.

EXHIBIT 1 – NOISE COMPLAINT RESOLUTION FORM

DARDEN CLEAN ENERGY PROJECT (23-OPT-02)	
NOISE COMPLAINT LOG NUMBER _____	
Complainant's name and address: 	
Phone number: _____	
Date complaint received: _____	
Time complaint received: _____	
Nature of noise complaint: 	
Definition of problem after investigation by plant personnel: 	
Date complainant first contacted: _____	
Initial noise level at 3 feet from noise source: _____ dBA	Date: _____
Initial noise level at complainant's property: _____ dBA	Date: _____
Final noise levels at 3 feet from noise source: _____ dBA	Date: _____
Final noise level at complainant's property: _____ dBA	Date: _____
Description of corrective measures taken: 	
Complainant's signature: _____	Date: _____
Date installation completed: _____	
Date first letter sent to complainant: _____ (copy attached)	
Date final letter sent to complainant: _____ (copy attached)	
This information is certified to be correct: 	
Plant Manager's Signature: _____	

5.9.7 References

- Caltrans 2013 – California Department of Transportation (Caltrans). Technical Noise Supplement to the Caltrans Traffic Noise Analysis Protocol, A Guide for Measuring, Modeling, and Abating Highway Operation and Construction Noise Impacts, Division of Environmental Analysis, Environmental Engineering, September 2013. Report No. CT-HWANP-RT-13069.25.3. Accessed on May 19, 2023. Accessed online at: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/traffic-noise-protocol-april-2020-a11y.pdf>
- Fresno 2024a – Fresno County General Plan Policy Document, dated February 2024, Accessed on: January 14, 2025. Accessed online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- Fresno 2024b – Fresno County Noise Ordinance. Accessed on: September 30, 2024. Accessed online at: https://library.municode.com/ca/fresno_county/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.40NOCO
- IP 2024n – Intersect Power (TN 260642). Updated Project Description December 2024, dated December 13, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023cc – Rincon Consultants, Inc. (TN 252982). Section 5-11 Waste Management, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024k – Rincon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2, dated March 15, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023r – Rincon Consultants, Inc. (TN 252966). Appendix J Noise Study, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023u – Rincon Consultants, Inc. (TN 252972). Section 5-3 Noise, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

5.10 Public Health

The Darden Clean Energy Project (DCEP or project) would be in an unincorporated area of western Fresno County in the San Joaquin Valley Air Basin (SJVAB or Air Basin). The Project site is in an agricultural area of unincorporated Fresno County south of the community of Cantua Creek. The solar facility, BESS, and an associated substation would be located on approximately 9,100 acres of land currently owned by Westlands Water District, between South Sonoma Avenue to the west and South Butte Avenue to the east. The project site is southeast of the existing Panoche Power Plant.

In addition to the facility and linears, the project also consists of offsite components that fall outside the CEC's jurisdiction but are part of the overall project. These components include the (1) construction of PG&E's switchyard, (2) the construction of a transmission line between the PG&E switchyard and the existing Los Banos-Midway 500 kV line, and (3) the construction of a fiber optic communication line from the PG&E switchyard north to an existing splice point to the Panoche substation or south to the existing Gates substation. In addition to these actions, the California Independent System Operator (California ISO) identified upstream upgrades to three existing substations, Los Banos, Midway and Gates or Manning as well as the addition of two transposition structures. These offsite components are considered as part of this analysis.

The purpose of this Public Health analysis is to determine if toxic emissions from the proposed project would have the potential to cause significant adverse public health impacts or violate standards for public health protection in the project area.

The toxic air contaminants addressed in this analysis are pollutants for which there are no specific ambient air quality standards. **Section 5.1, Air Quality** separately addresses the pollutants for which there are such ambient air quality standards, known as criteria, air pollutants. See **Section 5.7, Hazards, Hazardous Materials, and Wildfire**, and **Section 5.9, Noise and Vibration**, for additional analyses of human health effects.

5.10.1 Environmental Setting

Existing Conditions

Toxic Air Contaminants

California Health and Safety Code, section 39655, defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." In addition, substances which have been listed as hazardous air pollutants (HAPs) pursuant to 42 U.S.C. section 7412 are included as TACs under the state law pursuant to Health and Safety Code, section 39657 (b). California Air Resources Board

(CARB) formally identified federal HAPs as TACs in California Code of Regulations, Title 17, section 93001 (OEHHA 2024).

TACs, or air toxics, are different from criteria pollutants such as ground-level ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. Criteria air pollutants are regulated using National Ambient Air Quality Standard (NAAQS) and California Ambient Air Quality Standard (CAAQS), as noted above. However, there are no ambient standards for most TACs, therefore, site-specific health risk assessments need to be conducted to evaluate whether risks of exposure to TACs create an adverse impact. Specific TACs have known acute, chronic, and cancer health impacts. CARB has identified TACs in California Code of Regulations, Title 17, sections 93000 and 93001. The nearly 200 regulated TACs include asbestos, organic, and inorganic chemical compounds and compound categories, diesel exhaust, and certain metals. The requirements of the Air Toxic “Hot Spots” Information and Assessment Act of 1987 (Health and Saf. Code, §44300 et seq.) apply to facilities that emit these listed TACs above regulated threshold quantities.

Sensitive Receptors

The San Joaquin Valley Air Pollution Control District (SJVAPCD) Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a), defines sensitive receptors as: people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess TAC impacts on public health.

Sensitive receptors are located immediately adjacent to the project site, including single-family residences along South Sonoma Avenue, South Napa Avenue, South Yuba Avenue, West Harlan Avenue, West Cerini Avenue, and West Mount Whitney Avenue (RCI 2023x).

Health Effects of TACs

The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. Exposure to TACs can cause serious adverse human health effects, known as injury or illness, including cancer and birth defects. Numerous other health effects also have been linked to exposure to TACs, including heart disease, sudden infant death syndrome, respiratory infections in children, lung cancer, and breast cancer (OEHHA 2015; OEHHA 2024).

The primary on-site TAC emission sources for the proposed project would be diesel engines, including engines powering the vehicles and equipment during construction and operation. Diesel exhaust is a complex mixture of gases and fine particles including over 40 substances listed by the U.S. EPA as HAPs and by CARB as TACs. The solid material in diesel exhaust is known as DPM (CARB 2024).

DPM has been the accepted surrogate for whole diesel exhaust since the late 1990's. CARB identified DPM as the surrogate compound for whole diesel exhaust in its Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant staff report in April 1998 (Appendix III, Part A, Exposure Assessment) (CARB 1998). DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves attention mainly because of its ability to induce serious noncancerous effects and its status as a likely human carcinogen. Diesel exhaust is also characterized by CARB as "particulate matter from diesel-fueled engines." The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the U.S. EPA as "likely to be carcinogenic to humans" (U.S. EPA 2002).

Naturally Occurring Asbestos

Naturally occurring asbestos may be present at sites with certain geologic conditions. This health hazard may occur at a project site in a geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the US Geological Survey map detailing natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the project site (Van Gosen and Clinkenbeard 2011).

Valley Fever

Soils in some areas of California host the microscopic fungus that causes Valley Fever, known as *Coccidioides immitis*, which lives in the top two to 12 inches of soil in many parts of the state. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled. Workers in Shasta County are at a relatively lower risk than in other areas of California. In addition, employers have a legal responsibility to provide workers with protection from health risks, including any risks due to Valley Fever (DIR 2022). The primary ways to reduce the risk of Valley Fever are to avoid exposure to dusty air or dust storms, prevent dirt or dust from becoming airborne, and, if working at a dusty site is unavoidable, wear respiratory protection with particulate filters rated as N95 or higher (DIR 2022).

CO Hotspots

A CO hotspot refers to a localized area where CO concentrations exceed ambient air quality standards. These hotspots can occur at intersections with high peak-hour traffic volumes. Specifically, CO hotspots may be created at intersections where traffic levels are high enough to cause local CO concentrations to exceed the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (SJVAPCD 2022). The entire San Joaquin Valley Air Basin is currently in

compliance with state and federal CO standards, and no air quality monitoring stations within the SJVAPCD jurisdiction report CO levels that exceed these standards.

Regulatory

Federal

Federal Clean Air Act

The federal Clean Air Act (CAA), Section 112 (42 U.S.C., § 7412) defines the list of specified Hazardous Air Pollutant (HAP) and requires new sources that emit more than 10 tons per year of any HAP or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology.

HAPs are a variety of substances that pose serious health risks. Direct exposure to HAPs has been shown to cause cancer, reproductive effects or birth defects, damage to the brain and nervous system, and respiratory disorders. Categories of sources that cause HAP emissions are controlled through separate standards under CAA Section 112: National Emission Standards for Hazardous Air Pollutants (NESHAPs). These standards are specifically designed to reduce the potency, persistence, or potential bioaccumulation of HAPs.

Title 40 Code of Federal Regulations Parts 61 and 63 National Emission Standards for Hazardous Air Pollutants. Stationary reciprocating internal combustion engines (RICE), including stationary “spark ignition” engines fired on natural gas, landfill gas, gasoline, or propane, are subject to the RICE NESHAP (40 C.F.R. Part 63, Subpart ZZZZ). This regulation establishes national emission limitations and operating limitations for HAPs, in terms of hydrocarbons and formaldehyde concentrations emitted from stationary RICE. This regulation also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations, and the engine and after-treatment control device (if any) must be operated according to the manufacturer's emission-related written instructions (40 C.F.R., § 63.6625).

Asbestos is a HAP regulated under the NESHAP Subpart M (40 C.F.R., § 61.140). The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. CAA air toxics regulations specify work practices for asbestos to be followed during demolitions and renovations (40 C.F.R., § 61.145). The regulations require a thorough inspection of the area where the demolition or renovation would occur and advance notification of the appropriate delegated entity. Work practice standards that control asbestos emissions must be implemented, such as removing all asbestos-containing materials (ACM), adequately wetting all regulated ACM, and sealing ACM in leak-tight containers and disposing of the asbestos-containing waste material as expeditiously as practicable.

State

California State Health and Safety Code

Sections 39650 et seq. These sections mandated the CARB and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies. They also required that the New Source Review rule for the permitting of new and modified stationary sources of air pollution in each air pollution control district include regulations that require procedures for controlling the emission of toxic air contaminants.

Section 41700. This section states that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”

Air Toxic “Hot Spots” Information and Assessment Act of 1987. The Air Toxic “Hot Spots” Information and Assessment Act of 1987 (Assembly Bill 2588 [Connelly, Statutes of 1987], and codified as Health and Safety Code, § 44300 and the following), identifies TAC hot spots where emissions from specific stationary sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Many TACs are also classified as HAPs. AB 2588 requires that a business or other establishment identified as a significant stationary source of toxic emissions provide the affected population with information about the health risks posed by their emissions.

Airborne Toxic Control Measures (ATCM)

ATCM for Stationary Compression Ignition Engines, Emergency Standby Diesel-Fueled Compression Ignition Engines. Statewide regulations govern the use of and emissions performance standards for emergency standby diesel-fueled engines, including those of the project. As defined in regulation (Cal. Code Regs., tit. 17, §93115.4(a)(29)), an emergency standby engine is, among other possible use, one that provides electrical power during an emergency use and is not the source of primary power at the facility and is not operated to supply power to the electric grid. The corresponding ATCM (Cal. Code Regs., tit. 17, § 93115.6) restricts each emergency standby engine to operate no more than 50 hours per year for maintenance and testing purposes. The ATCM establishes no limit on engine operation for emergency use or for emission testing to show compliance with the ATCM’s standards.

Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. CARB has adopted the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities (Cal. Code Regs., tit.17 § 93105). The Asbestos ATCM applies to any project that would include sites to be disturbed in a

geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the U.S. Geological Survey map detailing natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the project site (Van Gosen and Clinkenbeard 2011).

Local

Fresno County General Plan

Air Quality Element. The Air Quality Element of the Fresno County General Plan includes the following policies designed to reduce air pollutant emissions in the County (Fresno 2024):

- *Policy OS-G.13. Valley Fever Mitigation.* The County shall continue to promote public awareness of Valley Fever risks relating to ground disturbing activities through the provision of educational materials, webpages and resource contact information. For projects involving ground disturbance on unpaved areas left undisturbed for 6 months or more, the County shall require developers to provide project-specific Valley Fever training and training materials.
- *Policy OS-G.14. Fugitive Dust Control Measures.* The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVAPCD's particulate matter of less than ten (10) microns (PM10) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.
- *Policy OS-G.15. Access Road Standards.* The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.
- *Policy OS-G.16. Roadway Dust Control.* The County shall continue to work to reduce PM10 and PM2.5 emissions from County maintained roads by considering shoulder treatments for dust control as part of road reconstruction projects.

San Joaquin Valley APCD Rules and Regulations

The following San Joaquin Valley APCD rules are applicable to the project to limit the generation of air pollutants in the San Joaquin Valley:

- Regulation VIII (Fugitive PM10 Prohibitions): contains rules developed pursuant to U.S. EPA guidance for "serious" PM10 nonattainment areas. Rules included under this regulation limit fugitive PM10 emissions from the following sources: construction, demolition, excavation, extraction, and other earth moving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources.
- Rule 2201, New and Modified Source Review Rule, applies to all new stationary sources or modified existing stationary sources that are subject to the SJVAPCD

permit requirements. The rule requires review of the new or modified stationary source to ensure that the sources which are subject to the district permit requirements and after construction, emit or may emit one or more affected pollutants.

- Rule 4101 (Visibility) limits the visible plume from any source to 20 percent opacity.
- Rule 4102 (Nuisance) prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public.
- Rule 4601 (Architectural Coatings) limits volatile organic compound (VOC) emissions from architectural coatings. This rule specifies architectural coatings storage, cleanup, and labeling requirements.
- Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations) limits VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations and applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.
- Rule 9510 (Indirect Source Review) requires certain development projects to mitigate exhaust emissions from construction equipment greater than 50 horsepower to 20 percent below statewide average NOx emissions and 45 percent below statewide average PM10 exhaust emissions. This rule also requires applicants to reduce baseline emissions of NOx and PM10 emissions associated with operations by 33.3 percent and 50 percent respectively over a period of 10 years.

Cumulative

The proposed project would be in Fresno County in the SJVAB. Past, present, and future development projects contribute to the region's TAC levels on a cumulative basis. Although the region experiences the existing conditions of acute, chronic, and cancer health risks due to TACs attributable to the region's development history, the project site is isolated and unlikely to be affected by the region's other industrial sources of TACs. As discussed in **Section 5.1, Air Quality**, for Air Quality cumulative analysis, a radius of six miles is normally used because based on staff's modeling experience, beyond six miles there is no statistically significant concentration overlap for nonreactive pollutant concentration between two stationary emission sources. According to **Appendix A, Table A-1**, the existing, approved, pending and proposed projects of potential sources of toxic air contaminants within six miles include:

- FC-1: Akhavi LLC Project (3.6 miles southeast of the solar facility)

There are no existing, approved, pending and proposed projects of potential sources of toxic air contaminants within six miles of the PG&E utility switchyard.

The existing, approved, pending and proposed projects of potential sources of toxic air contaminants within six miles of the PG&E downstream network upgrades include:

- FC-2: Arroyo Pasajero Bridge Replacement Geotechnical (3.5 miles east of Scenario 2)
- FC-4: Kamm Avenue Pistachio (2.8 miles east of Scenario 1)
- FC-6: Seneca Resources Corporation Project (1.5 miles west of Scenario 3)
- FC-8: Gas Station and Convenience Store (1.1 miles west of Scenario 3)
- FC-9: Heartland Hydrogen Project (3.7 miles east of Scenario 1)
- FC-10: Agricultural Commercial Center (5.9 miles east of Scenarios 2 and 3)
- FC-11: Multi use/Freeway commercial development (1.2 miles west of Scenario 3)
- FC-14: Tranquility Solar Project (3.6 miles east of Scenario 1)
- FC-26: Manning 500/230 kV Substation Project (0.5 miles north of Scenario 1)
- FC-27: CES Electron Farm One (4.5 miles northwest of Scenario 1)
- FC 28: San Luis West Solar Project (0.6 miles east of Scenarios 2 and 3)
- FC 30: Key Energy Storage (Adjacent to Scenarios 2 and 3 which terminate at the Gates Substation)

Past, present, and reasonably foreseeable probable future public health impacts could be attributable to each of the cumulative projects, especially those that involve construction activities or O&M activities with substantial sources of air pollutants.

5.10.2 Environmental Impacts

PUBLIC HEALTH	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determination.				
a. Would the project expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, air quality and staff additions.

5.10.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Staff determines the health effects of exposure to toxic emissions based on impacts to the maximum exposed individual. This is a person hypothetically exposed to project emissions at a location where the highest ambient impacts were calculated using worst-case assumptions of contaminant concentrations and exposure.

Staff conducts the public health assessment by evaluating the information and data provided by the applicant. Staff also relies upon the expertise and guidelines of the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) in order to: (1) identify contaminants that cause cancer or other noncancer health effects, and (2) identify the toxicity, cancer potency factors and non-cancer Reference Exposure Levels (RELs) of these contaminants. Staff also relies upon the expertise of the CARB and local air districts to conduct ambient air monitoring of TACs and on the California Department of Public Health (CDPH) to evaluate pollutant impacts in specific communities. The public health related data sets, guidelines and technical analysis issued by these agencies are routinely relied on by experts in the field of public health to perform project level analysis to identify any impacts to public health from the construction and operation of the project. Typically, a screening level risk assessment is performed using simplified assumptions that are intentionally biased toward protection of public health. That is, an analysis is designed that overestimates public health impacts from exposure to project emissions. This approach increases the likelihood that the actual risks from the new source of emissions will be much lower than the risks as estimated by the screening level assessment. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then using those conditions in the study. Such conditions include:

- using the highest levels of pollutants that could be emitted from the source;
- assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- using the type of air quality computer model which predicts the greatest plausible impacts;
- calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- assuming that an individual's exposure to cancer-causing agents occurs continuously for 30 years¹; and
- using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses).

Staff evaluated health risks primarily in relation to diesel particulate matter (DPM), identifying it as the TAC expected to be emitted in the largest quantity. Emissions of

¹ In 2015 Guidance, OEHHA recommends that an exposure duration (residency time) of 30 years (instead of 70 years) be used to estimate individual cancer risk for the maximally exposed individual resident (MEIR) (OEHHA 2015).

DPM are evaluated for potential long-term (chronic) non-cancer health effects, as well as cancer (long-term) health effects. OEHHA has not developed an acute Reference Exposure Level (REL) for DPM, therefore, acute non-cancer health effects are not evaluated for DPM. The significance of project health impacts is determined separately for each of these categories of health effects. To assess chronic health risks and cancer risks, staff used annual average concentrations of DPM at the most exposed sensitive receptors. Staff applied OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015) and the SJVAPCD's Risk Management Policy (SJVAPCD 2015b) to determine toxicity values and exposure parameters. Staff calculated health risks using standardized equations provided in OEHHA guidelines (OEHHA 2015), incorporating adjustments for age-specific exposure rates and sensitivity.

Thresholds of Significance

Acute and Chronic Noncancer Health Effects

Staff evaluates the significance of non-cancer health effects by calculating a "hazard index." A hazard index is a ratio comparing exposure from facility emissions to the reference (safe) exposure level. A hazard index of less than one (1.0) indicates that the worst-case exposure is below the safe threshold, suggesting that health protection is likely achieved, even for sensitive populations. In such a case, staff presumes that there would be no significant non-cancer project-related public health impacts. The SJVAPCD considers a non-cancer hazard index exceeding 1.0 to be significant (SJVAPCD 2024a). Staff considers chronic or acute non-cancer health impacts to be significant if the total hazard index exceeds 1.0.

Cancer Risks

A cancer risk that is at or below 1 chance in a million (or 1×10^{-6}) is not a public health concern. This means that no more than one person in a population of one million people exposed to the same level of chemical contaminant(s) at the site would develop cancer over a lifetime (OEHHA 2020).

Staff evaluates the significance of cancer risks by comparing estimated risks to established thresholds. The SJVAPCD considers a project to have a significant impact if it increases cancer risk by 20 in one million or more for the maximum exposed individual resident (MEIR) (SJVAPCD 2024a).

As noted earlier, the initial risk analysis for a project is typically performed at a screening level, which is designed to overstate actual risks, so that health protection can be ensured. Staff's analysis also addresses potential impacts on all segments of the population, including the young, the elderly, and individuals with existing medical conditions that would render them more sensitive to the adverse effects of TACs and any minority or low-income populations that are likely to be disproportionately affected by impacts. To accomplish this goal, staff uses the most current acceptable public health exposure levels set to protect the public from the effects of air toxics being analyzed. When a screening analysis shows the cancer risks to be above the

significance level, refined assumptions would be applied for likely a lower, more realistic, risk estimate. If, after refined assumptions, the project's risk is still found to exceed the significance level of 20 in one million, staff would recommend appropriate measures to reduce the risk to less than significant levels. If, after all feasible risk reduction measures have been considered and a refined analysis still identifies a cancer risk of greater than 20 in one million, staff would deem such a risk to be significant and unmitigable and would not recommend project approval.

5.10.2.2 Direct and Indirect Impacts

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determination.

a. Would the project expose sensitive receptors to substantial pollutant concentrations or result in other public health impact?

Construction— Less Than Significant with Mitigation Incorporated

Based on the analysis below, and with the incorporation of the conditions of certification (COCs) and/or mitigation measures described below, construction of the project would not expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Potential risks to public health during construction would be associated with exposure to particulate matter emissions from diesel-fueled engines and fugitive dust that may pose a risk of Valley Fever to individuals near the site. Diesel particulate matter (DPM) is expected to be the predominant TAC emitted during construction and is the main contaminant of concern for this project.

The project has included construction emission estimates based on an 18-month construction period, and a 36-month construction period. The construction phases would be equivalent in both construction scenarios, however there would be more days of construction phases overlapping in the 18-month scenario as compared to the 36-month construction period. The construction phases for the project include the following:

Phase 1: Site Preparation

Phase 2: Photo Voltaic (PV) Panel System

Phase 3: Inverters, Transformers, Substation and Electrical

Phase 4: Gen-tie

Phase 5: Battery Energy Storage System (BESS)

The applicant also included emissions and impacts analysis of the PG&E Utility Switchyard as Phase 6 of the project (see additional discussion below under PG&E Utility Switchyard).

Health Risks of Toxic Air Contaminants

The applicant's health risk assessment (HRA) focused on the on-site DPM emissions, which would be a subset of the total PM₁₀ impact. The applicant first conducted air dispersion modeling for the HRA using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 22112. AERMOD-ready meteorological data from the Mendota station (Station ID 99005), which was pre-processed with AERMET version 18081, was obtained from the SJVAPCD. The Mendota station is located approximately 17 miles northwest of the project site. The meteorological data is from the years 2007 through 2011 including hourly wind speed, direction, temperature, stability class, and mixing height. The applicant modeled receptor points at 25-meter intervals near sensitive receptors and at 100-meter intervals beyond the project boundary to ensure comprehensive coverage of maximum off-site impacts.

The applicant modeled construction emissions for the 18-month and 36-month construction scenarios, based on a 10-hour workday and a five-day workweek. The applicant derived emission rates by dividing total PM₁₀ exhaust emissions for on-site diesel equipment by the total number of working hours. The applicant modeled maximum hourly and annual concentrations at receptor points. The applicant then used the CARB Hot Spots Analysis and Reporting Program Version 2 (HARP2), version 22118, to determine cancer and non-cancer health risks. The applicant assessed cancer risks and chronic non-cancer risks for the maximum exposed individual resident (MEIR) and the point of maximum impact (PMI).

Staff reviewed the applicant's HRA and agreed with the inputs used by the applicant and the outputs from the model.

Tables 5.10-1 and **5.10-2** provide the health risks at the MEIR and the PMI for 18-month and 36-month construction schedules, respectively. The results show that the cancer risk and chronic non-cancer hazard index (HI) at both the MEIR and PMI would be well below the SJVAPCD thresholds (SJVAPCD 2024a) for both 18-month and 36-month construction schedules. In addition, since OEHHA has not developed an acute Reference Exposure Level (REL) for DPM, acute non-cancer health effects are not evaluated.

Mitigation measures identified in **Section 5.1, Air Quality** would further reduce the DPM emissions and health risks of the project. While mitigation is identified for the Air Quality impacts analysis, no mitigation would be necessary to ensure that construction activities do not expose sensitive receptors to substantial concentrations of DPM.

TABLE 5.10-1 HEALTH RISKS IMPACT DURING 18-MONTH CONSTRUCTION SCHEDULE

Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)
Phase 1 – Site Prep	0.0744	1.3E-04
Phase 2 – PV Panel System	0.0659	5.4E-05
Phase 3 – Inverters, etc.	0.0133	2.7E-05
Phase 4 – Gen-Tie	0.0019	1.8E-06
Phase 5 – Battery Storage	0.0035	7.0E-06
Phase 6 – PG&E Utility Switchyard	0.0017	2.6E-06
Total Constructional MEIR	0.1545	2.1E-04
Total Constructional PMI	1.9269	2.9E-03
Combined MEIR	0.54	NA
Combined PMI	4.24	NA
Threshold	20	1
Threshold Exceeded?	No	No

Note: The MEIR location during the 18-month construction period is at coordinates (36.48526, –120.24641), located around 210 feet to the project site near South Sonoma Avenue. The PMI location during the 18-month construction period is at coordinates (36.42018, –120.40591), located at the border of southeast corner of the project site, where no sensitive receptors are present.

Source: Staff has removed the hydrogen construction phase to evaluate health risks, as compared to the application (Source: RCI 2023x, Table 5.8-1).

TABLE 5.10-2 HEALTH RISKS IMPACT DURING 36-MONTH CONSTRUCTION SCHEDULE

Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)
Phase 1 – Site Prep	0.0066	2.6E-05
Phase 2 – PV Panel System	0.0572	1.1E-04
Phase 3 – Inverters, etc.	0.0155	2.2E-03
Phase 4 – Gen-Tie	0.0010	1.4E-05
Phase 5 – Battery Storage	0.0016	4.4E-04
Phase 6 – PG&E Utility Switchyard	0.0009	2.0E-03
Total Constructional MEIR	0.0795	8.7E-05
Total Constructional PMI	1.4287	2.4E-03
Combined MEIR	0.34	NA
Combined PMI	3.51	NA
Threshold	20	1
Threshold Exceeded?	No	No

Note: The MEIR location during the 36-month construction period is at coordinates (36.48526, –120.24641), located around 210 feet to the project site near South Sonoma Avenue. The PMI location during the 36-month construction period is at coordinates (36.4853, -120.2464), located around 210 feet to the project site near South Sonoma Avenue.

Source: Staff has removed the hydrogen construction phase to evaluate health risks, as compared to the application Source: RCI 2023x, Table 5.8-1).

Valley Fever. Construction and operation of the proposed project would pose a risk of Valley Fever to workers, operators, and the general public who could inhale the airborne spores of the fungus of the *Coccidioides* species, which is the causative agent of Valley Fever. It is the growth of these inhaled spores in the lungs that constitutes Valley Fever whose symptoms could be mild with influenza-like symptoms and rashes, or life-threatening from pneumonia, lung nodules, and meningitis. The risk of serious symptoms is highest for individuals with weakened immune systems such as pregnant women, and those with several types of pre-existing diseases.

The eastern portion of the Project site is located in western Fresno County where the risk is higher compared to other parts of the County (Fresno 2023). Construction activities, including ground-disturbing operations, could increase the potential for exposure to airborne spores among nearby residents and on-site workers if such spores are present.

Since the fungal spores at issue are disseminated while attached to dust, and it is not possible to prevent all risks of infection in the project area or other parts of the U.S. where the fungus occurs naturally, staff recommends dust control measures to mitigate the risk. This infection risk is minimized through measures that require soil disturbance and dust generation work to be performed in a manner that limits and avoids dust generation to the extent reasonably possible. **Section 5.1, Air Quality** separately seeks to minimize unnecessary airborne dust through recommended COCs **AQ-SC1** through **AQ-SC4**, which would minimize dust generation in the construction phase. In addition, staff recommend Condition of Certification **PH-1** to ensure that exposure to Valley Fever among personnel and the public would be reduced to the greatest extent feasible. The recommended Air Quality and Public Health conditions of certification would adequately minimize Valley Fever risk in the project and other areas where the *Coccidioides* fungus occurs naturally.

CO Hotspots. The entire San Joaquin Valley Air Basin is in compliance with state and federal CO standards, and no air quality monitoring stations within the SJVAPCD jurisdiction report elevated CO levels. The low background levels of CO in the SJVAB, combined with the continuous improvement in emissions standards for new sources in accordance with state and federal regulations, and the estimated maximum of 60 trips per day during operational and maintenance activities, indicates that the Project would not significantly impact traffic conditions. Additionally, as shown in **Section 5.1, Air Quality**, CO impacts from construction and operation would not exceed ambient air quality standards.

PG&E Utility Switchyard

The projected maximum impacts from the PG&E utility switchyard's construction for both 18-month and 36-month schedules are shown in **Tables 5.10-1** and **Table 5.10-2**. These projections indicate that the impacts from construction of the PG&E utility switchyard would not exceed any threshold for cancer risk or chronic non-cancer health risk. CEC is also recommending construction Mitigation Measure (**MM**) **AQ-1** described

in **Section 5.1.6** in **Section 5.1, Air Quality**, which would require PG&E to implement generalized procedures to reduce construction emissions. These measures would further reduce impacts from construction activities. In addition, staff recommend **MM PH-1** to ensure that exposure to Valley Fever among personnel and the public would be reduced to the greatest extent feasible.

PG&E Downstream Network Upgrades

The downstream network upgrades installation would be completed in approximately 12 to 16 weeks; at any one location, construction would take between 2 and 3 weeks (RCI 2024z). Construction activities within the linear components of the downstream network upgrades would be temporary in nature and are unlikely to result in long-term adverse effects on public health. Short-term construction emissions and any associated public health impacts, such as exposure to dust or other airborne pollutants, would dissipate as a function of distance from the construction site and comply with applicable regulations. Moreover, these activities would not introduce any new sources of significant health risks, such as hazardous air pollutants or toxic emissions, beyond those identified and mitigated elsewhere in this analysis.

Operation– Less Than Significant Impact

Based on the analysis below, operation of the project would not expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Operational emissions would result from off-site vehicle trips for worker commutes, material deliveries, site security, and facility upkeep emissions from the proposed solar facility which would also have one O&M building, and from occasional liquid petroleum gas (LPG) fuel combustion by the emergency generators at the substation locations; additionally, minor emissions would be caused by routine solar panel washings, consumer product use, and landscaping at the O&M building.

Staff evaluated health risks associated with operational activities over a 30-year exposure period consistent with the methodology described above. **Table 5.10-3** shows the health risks evaluated by the applicant for the original project design, which included all green hydrogen facilities during operation. Since the applicant decided to remove the green hydrogen facilities, the health risks for the current project design would be lower than those shown in **Table 5.10-3**. Therefore, results shown in **Table 5.10-3** are conservative.

Table 5.10-3 shows that the increased cancer risk from operational activities is estimated at 0.37 per million at the MEIR and 5.69 per million at the PMI. Chronic non-cancer risks would be 0.0001 at the MEIR and 0.002 at the PMI. Acute non-cancer risks

would be 0.020 at the MEIR and 0.036 at the PMI. These operational health risk impacts would be below significance thresholds.

In addition, staff also evaluated the combined cancer risks from construction and operational activities at receptor locations, assuming operational exposure durations of 28.5 and 27.5 years to account for the 18-month and 36-month construction schedules, respectively. As shown in **Tables 5.10-1** and **5.10-2**, the combined cancer risks would be well below the significance threshold of 20 per million.

TABLE 5.10-3 HEALTH RISKS IMPACT DURING OPERATIONAL PHASE

Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)	Acute Non-Cancer Hazard Index (HI) (unitless)
MEIR	0.37	1.0E-4	0.020
PMI	5.69	2.0E-3	0.036
Threshold	20	1	1
Threshold Exceeded?	No	No	No

Note: The MEIR location during the operation period is at coordinates (36.48526, -120.24641), located around 210 feet to the project site near South Sonoma Avenue. The PMI location during the operation period is at coordinates (36.42018, -120.40591), located at the border of southeast corner of the project site, where no sensitive receptors are present.

Sources: RCI 2023x with applicant provided spreadsheet, RCI 2024m.

PG&E Utility Switchyard

Operation and maintenance of the utility switchyard would be performed remotely by PG&E, which would minimize vehicle trips to and from the site during its operation, resulting in negligible emissions. Additionally, no diesel generators or other non-electric equipment that emit diesel particulate matter would be utilized.

PG&E Downstream Network Upgrades

Operations and maintenance (O&M) activities associated with the selected alternative fiber line scenario and upgrades at existing PG&E substations would be minimal and conducted as part of PG&E's Transmission and Distribution System O&M Program (RCI 2024z). Public health impacts during operation would be negligible, as no diesel generators, nonelectric equipment, or other sources of harmful emissions would be used. Vehicle trips to and from the site for routine O&M would generate minimal emissions, which are unlikely to pose any significant risk to public health.

5.10.2.3 Cumulative Impacts

Past, present, and reasonably foreseeable probable future public health impacts could be attributable to each of the cumulative projects, especially those that involve construction activities or O&M activities with substantial sources of air pollutants. As mentioned above, according to **Appendix A, Table A-1**, there are some existing,

approved, pending and proposed projects of potential sources of toxic air contaminants within six miles of the project and PG&E downstream network upgrades.

Each of the projects in the cumulative project scenario could result in some level of contribution to public health impacts, although the individual contribution of each project would be minimized if the project complies with applicable health-protective laws, ordinances. The SJVAPCD considers TAC emissions to be a localized issue, as TAC concentrations are generally highest near the source and decrease with distance. While air quality cumulative impacts could occur with sources within a six-mile radius (as discussed in **Section 5.1, Air Quality**), cumulative public health impacts from TACs are usually not significant unless the emitting sources are extremely close to each other, within a few blocks, not miles. The CARB provides recommendations for siting new sources or sensitive receptors near TAC sources, with recommended distances typically ranging from 500 to 1,000 feet, depending on the source category (CARB 2005). In the absence of specific guidance from the SJVAPCD, potential cumulative impacts from TACs were assessed using a 1,000-foot radius from the project site boundary. The project site is not located within 1,000 feet of any existing or planned projects that would generate TACs affecting a substantial number of people.

Construction– Less Than Significant with Mitigation Incorporated

Based on the analysis below, and with the incorporation of the conditions of certification and/or mitigation measures described below, project construction would not contribute to cumulatively considerable impacts to Public Health and impacts would be less than significant with mitigation incorporated.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The contribution of the project construction to both cancer risk and chronic non-cancer impacts would be very small even in a cumulative context including other regional sources. Additionally, construction and operation, and decommissioning-related traffic is not expected to create a CO hotspot. Construction and decommissioning activities would be short-term, and the nearest intersection is located more than one mile from any sensitive receptor. In addition, staff recommend COC **PH-1** to ensure that exposure to Valley fever among personnel and the public would be reduced to the greatest extent feasible.

PG&E Utility Switchyard

Construction impacts of the PG&E utility switchyard are considered in the cumulative impact analysis of the overall project discussed above. In addition, staff recommend **MM PH-1** to ensure that exposure to Valley fever among personnel and the public would be reduced to the greatest extent feasible.

PG&E Downstream Network Upgrades

As discussed above, public health impacts of construction of the PG&E downstream network upgrades would be less than significant. Therefore, the contribution of the PG&E downstream network upgrades to any cumulative impacts would not be cumulatively considerable.

Operation– Less Than Significant Impact

Based on the analysis below, project operation would not contribute to cumulatively considerable impacts to Public Health and impacts would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The public health impacts of the project operation would be very small even in a cumulative context including other regional sources; its contribution to area health impacts would thus be less than significant in a cumulative context.

PG&E Utility Switchyard

Operation and maintenance of the utility switchyard would be performed remotely by PG&E, which would minimize vehicle trips to and from the site during its operation, resulting in negligible emissions. Additionally, no diesel generators or other non-electric equipment that emit diesel particulate matter would be utilized. Operational impacts of the PG&E utility switchyard would not be cumulatively considerable.

PG&E Downstream Network Upgrades

As discussed above, public health impacts of operation of the PG&E downstream network upgrades would be less than significant. Therefore, the contribution of the PG&E downstream network upgrades to any cumulative impacts would not be cumulatively considerable.

5.10.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.10-6 below details staff's determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.10-6 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Federal	
Clean Air Act	
NESHAPs under CAA, section 112 (42 U.S.C., § 7412), 40 CFR Part 63, NESHAP Subpart ZZZZ	Yes. Applies to proposed project's propane-fueled stationary emergency generator engines. Emergency stationary RICE included with the proposed project would be subject to operating requirements in this federal regulation. With the engine certified to comply with NSPS Subpart JJJJ, the emission limitations in RICE NESHAP Subpart ZZZZ would not apply. Project owner would purchase certified engines and operate it according to manufacturer's instructions. See COC AQ-1 and AQ-18 .
Local	
San Joaquin Valley APCD	
Regulation VIII (Fugitive PM10 Prohibitions), Rule 2201 (New and Modified Stationary Source Review Rule), Rule 4101 (Visibility), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations), Rule 9510 (Indirect Source Review), and Rule 8021	Yes. As detailed in Section 5.1 Air Quality , the project would comply with SJVAPCD plans, rules and regulations with implementation of Air Quality COCs AQ-SC1 to AQ-SC6 , AQ-1 to AQ-5 , AQ-7 , AQ-9 , AQ-10 , AQ-11 , and AQ-14 .

5.10.4 Conclusions and Recommendations

As discussed above, with implementation of conditions of certification, the project would have a less than significant impact related to public health and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.10.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Impacts associated with the PG&E Utility Switchyard and Downstream Network Upgrades to be considered for permitting by CPUC would be reduced to less than significant with the inclusion of MMs.

5.10.5 Proposed Conditions of Certification

PH-1 Minimize Personnel and Public Exposure to Valley Fever. Prior to site preparation, grading activities, or ground disturbance, the Applicant shall prepare a Fugitive Dust Control Plan for the Project. The Fugitive Dust Control Plan shall include the following at a minimum:

- a. Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations.
- b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment works well ahead or downwind of workers on the ground.

- c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- d. If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust are to leave the area until a full truck resumes water spraying.
- e. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arrestance (HEPA) filtered air system.
- f. N95 respirators shall be provided to onsite workers for the duration of the construction period.
- g. Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Fresno County Planning and Community Development Department within 24 hours of the training session.
- h. A Valley Fever informational handout shall be provided to all on-site construction personnel. The handout shall provide, at a minimum, information regarding the symptoms, health effects, preventative measures, and treatment.

Verification: At least 30 days prior to the start of any ground disturbance, the project owner shall submit the Fugitive Dust Control Plan to the Compliance Project Manager (CPM) for approval. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt. The project owner shall provide the CPM a Monthly Compliance Report with a summary of all actions taken to maintain compliance with this condition.

5.10.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2).

MM PH-1 Minimize Personnel and Public Exposure to Valley Fever. Prior to site preparation, grading activities, or ground disturbance, the Applicant shall prepare a Fugitive Dust Control Plan for the Project. The Fugitive Dust Control Plan shall include the following at a minimum:

- a. Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations.
- b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment works well ahead or downwind of workers on the ground.
- c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.

- d. If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust are to leave the area until a full truck resumes water spraying.
- e. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arrestance (HEPA) filtered air system.
- f. N95 respirators shall be provided to onsite workers for the duration of the construction period.
- g. Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Fresno County Planning and Community Development Department within 24 hours of the training session.
- h. A Valley Fever informational handout shall be provided to all on-site construction personnel. The handout shall provide, at a minimum, information regarding the symptoms, health effects, preventative measures, and treatment.

5.10.7 References

- CARB 1998 – California Air Resources Board (ARB). 1998. Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant. Appendix III, Part A, Exposure Assessment. June 1998. Accessed on: January 8, 2025. Accessed online at: https://ww3.arb.ca.gov/toxics/dieseltac/part_a.pdf.
- CARB 2005 – California Air Resources Board (CARB). Air Quality And Land Use Handbook: A Community Health Perspective. Accessed on January 7, 2025. Accessed online at: <https://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf>
- CARB 2024 – California Air Resources Board (CARB). Overview: Diesel Exhaust & Health. Accessed on: January 8, 2025. Accessed online at: <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>.
- DIR 2022 – Department of Industrial Relations (DIR). Protection from Valley Fever; Updated: April 2022. Accessed on January 8, 2025. Accessed online at: <https://www.dir.ca.gov/dosh/valley-fever-home.html>.<https://www.dir.ca.gov/dosh/valley-fever-home.html>.
- Fresno 2024 – Fresno County General Plan Policy Document dated February, 2024. Accessed December 2024, Accessed online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgrpr_general-plan_county_final_2024_02.pdf
- Fresno 2023 – County of Fresno. Public Health. Accessed on: January 8, 2025. Accessed online at: <https://www.fresnocountyca.gov/Departments/Public-HealthOEHHA>

- 2015 – Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed on: January 7, 2025. Accessed online at:
<https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>
- OEHHA 2020 – Office of Environmental Health Hazard Assessment (OEHHA). Cancer Risk and Noncancer Hazard Index. Fact Sheet for Contaminated Sites in California. February 2015. Accessed on: January 8, 2025. Accessed online at:
<https://oehha.ca.gov/media/downloads/risk-assessment/fact-sheet-california-human-health-screening-levels-chhsls/riskfactsheet.pdf>
- OEHHA 2024 – Office of Environmental Health Hazard Assessment (OEHHA). Toxic Air Contaminants. Accessed on: January 8, 2025. Accessed online at:
<https://oehha.ca.gov/air/toxic-air-contaminants>
- RCI 2023x – Rincon Consultants, Inc. (TN 252975). Section 5-8 Public Health, dated November 6. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Rincon Consultants, Inc. (TN 256296). Data Request Response Set 4, dated May 10, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024z – Rincon Consultants, Inc. (TN 258571). CEC Data Request Response Set 6, dated August 20, 2024. Accessed online at
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- SJVAPCD 2004b – San Joaquin Valley Air Pollution Control District (SJVAPCD). Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. Adopted November 15, 2001, Amended August 19, 2004. Accessed on: December 20, 2024. Accessed online at:
<https://www.valleyair.org/rules/currentrules/r8021.pdf>
- SJVAPCD 2015a – San Joaquin Valley Air Pollution Control District (SJVAPCD). Guidance for Assessing and Mitigating Air Quality Impacts. Accessed on: December 20, 2024. Accessed online at: <https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf>
- SJVAPCD 2015b – San Joaquin Valley Air Pollution Control District (SJVAPCD). Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document. Accessed on: January 8, 2025. Accessed online at:
<https://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf>
- SJVAPCD 2022 – San Joaquin Valley Air Pollution Control District (SJVAPCD). National Ambient Air Quality Standards. Accessed on: January 8, 2025. Accessed online at: <https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/>
- SJVAPCD 2024a – San Joaquin Valley Air Pollution Control District (SJVAPCD). CEQA Project Analysis Levels. Accessed on: January 8, 2025. Accessed online at:
<https://www.valleyair.org/transportation/ceqaanalysislevels.htm>

- SJVAPCD 2004b – San Joaquin Valley Air Pollution Control District (SVJAPCD). Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. Adopted November 15, 2001, Amended August 19, 2004. Accessed on: January 8, 2025. Accessed online at: <https://www.valleyair.org/rules/currnrules/r8021.pdf>
- U.S. EPA 2002 – United States Environmental Protection Agency (U.S. EPA). Health Assessment Document For Diesel Engine Exhaust. May 2002. Accessed on: January 8, 2025. Accessed online at: https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=36319&Lab=NCEA
- Van Gosen and Clinkenbeard 2011 – Van Gosen, B.S., and Clinkenbeard, J.P. (Van Gosen and Clinkenbeard). Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California: U.S. Geological Survey Open-File Report 2011-1188. Accessed on January 6, 2025. Accessed online at: <http://pubs.usgs.gov/of/2011/1188/>

5.11 Socioeconomics

This section describes the environmental setting and regulatory background and discusses the impacts associated with the construction and operation of the project with respect to population and housing, public services, and recreation.

5.11.1 Environmental Setting

Existing Conditions

Population and Housing

The project is proposed in the unincorporated area of Fresno County. Staff considers Fresno County, Madera County, and Kings County as the study area for population and housing-related impacts and the Fresno, Madera, and Hanford-Corcoran (King County) Metropolitan Statistical Areas (MSA) as the setting for labor supply for the project as shown in **Figure 5.11-1**.

Population. Fresno County had a total estimated population of 1,015,190 in 2022 (**Table 5.11-1**), ranking it 10th out of the 58 counties in California in terms of population (US Census Bureau, 2022). More than two-thirds (670,000) of the county's population is concentrated in the cities of Fresno (545,000) and Clovis (125,000), in the center of the county. Madera County's population was about 150,000 in 2022, much of which is in the City of Madera (66,000). The closest incorporated communities to the project site are San Joaquin (3,704), located about 15 miles north-east and Huron (6,222) located about 20 miles south-east (**Table 5.11-2**). Fresno County has a population density of almost 170 people per square mile, which is less dense than the statewide average of approximately 250 people per square mile (US Census Bureau, 2020a). The western part of Fresno County is considerably less-densely populated than the central portion, which includes the major population centers.

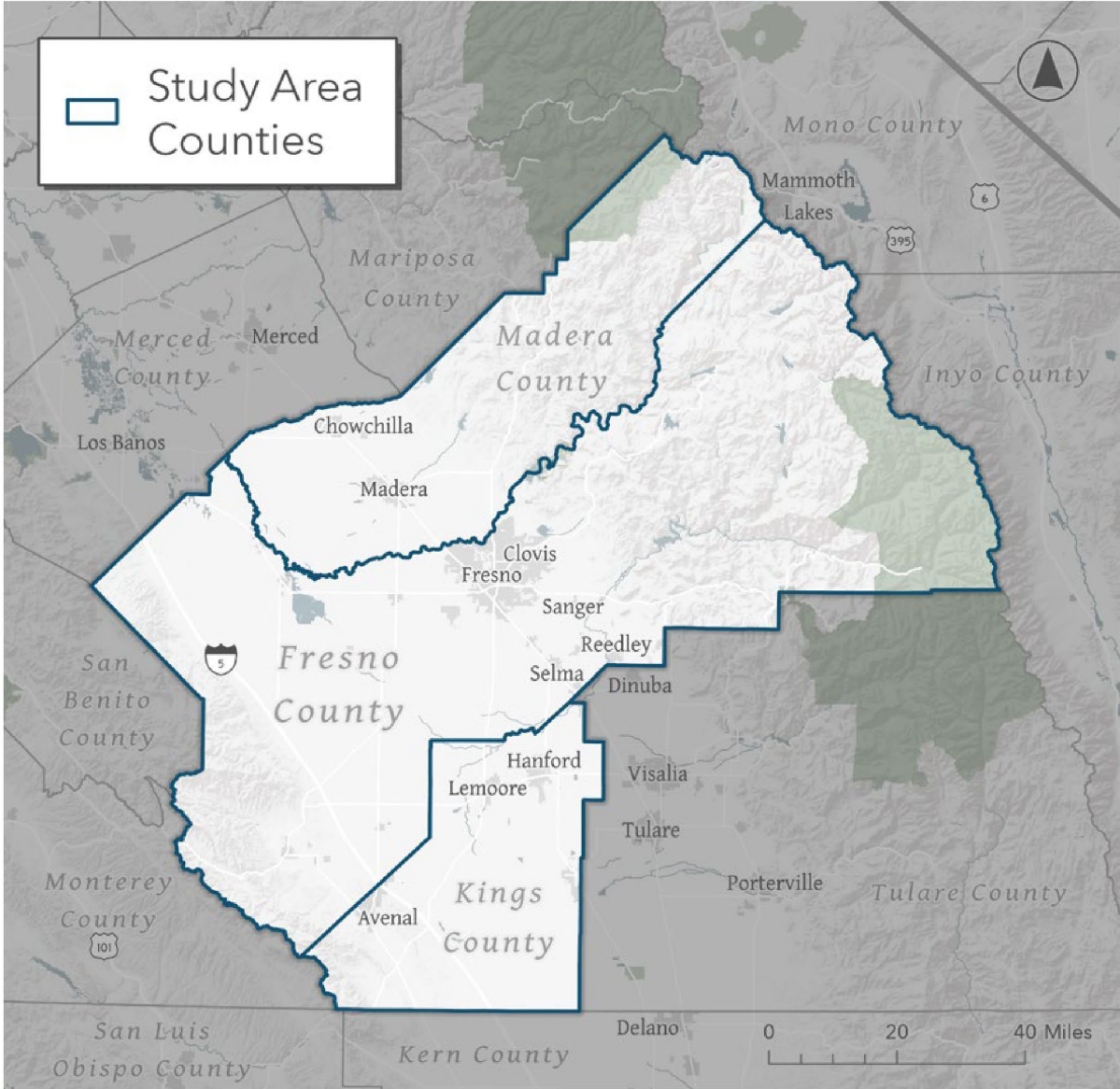


Figure 5.11-1
Study Area Counties

Sources: ESRI

Population Growth. **Table 5.11-1** shows the historical and projected populations for the three-county study area and the State of California as a whole. Population in California declined during the COVID-19 pandemic; however, population grew in Fresno County (see **Table 5.11-1**). Annualized population growth in California was 0.6 percent prior to the COVID-19 pandemic (2010-2020). Over the period most affected by the pandemic (2020-2023), the annualized population growth rate in California decreased by 0.4 percent. Conversely, the population grew in Fresno and Madera counties during the pandemic; however, the growth rate in Fresno County (0.3 percent) was lower than the growth rate prior to the pandemic (0.8 percent).

Over the next few decades, population in California is expected to grow, but at a steadily decreasing rate. An average annualized growth rate is estimated for the period from 2023 to 2040). Similarly in Fresno, Madera, and Kings counties, the population is expected to grow, but at a decreasing rate until 2040. The population of Madera County is expected to decrease after 2050, and the populations of Madera, Kings, and in California are expected to decrease between 2050 and 2060.

TABLE 5.11-1 POPULATION TRENDS AND PROJECTIONS, 2010-2060

	Fresno County		Madera County		Kings County		California	
Year	Population	AAGR	Population	AAGR	Population	AAGR	Population	AAGR
2010	930,450		150,865		152,982		37,253,956	
2020	1,007,344	0.8%	156,141	0.3%	152,200	-0.1%	39,520,071	0.6%
2023	1,015,793	0.3%	158,276	0.5%	152,340	0.0%	38,990,487	-0.4%
2030	1,047,382	0.4%	161,980	0.3%	157,531	0.5%	39,430,871	0.2%
2040	1,083,901	0.3%	163,345	0.1%	161,190	0.2%	40,106,449	0.2%
2050	1,098,206	0.1%	161,937	-0.1%	160,446	0.0%	40,049,519	0.0%
2060	1,095,205	0.0%	159,048	-0.2%	156,194	-0.3%	39,508,492	-0.1%

Note: AAGR= Average Annual Growth Rate

Source: California Department of Finance, 2023 & U.S. Census Bureau, Accessed 2023

Housing. The following discussion of housing focuses considers both the three-County study area and the area that would correspond to an approximately 60-mile commute to and from the project site as shown on **Table 5.11-2**. The total number of regional housing units including rental units, recreational vehicle sites, and hotel/motel rooms are considered.

TABLE 5.11-2 POPULATION AND DISTANCE FROM PROJECT SITE

Community	Population	Approximate Distance from Project Site (Driving Miles)
Fresno County		
Fresno	538,678	40
Clovis	118,488	50
Mendota	12,534	34
Kerman	15,817	27
Coalinga	17,560	26
Huron	6,222	22
Tranquility CDP*	645	20
San Joaquin	3,743	15

TABLE 5.11-2 POPULATION AND DISTANCE FROM PROJECT SITE

Community	Population	Approximate Distance from Project Site (Driving Miles)
Cantua Creek CDP*	471	10
Madera County		
Madera	66,173	45
Kings County		
Hanford	57,359	42
Lemoore Station CDP*	6,692	33

Note: *CDP=Census Designated Place

Source: U.S. Census Bureau, 2021a

Table 5.11-3 presents regional rental housing stock for the area, which includes houses, apartments, mobile homes, and single rooms meant for occupancy based on ESRI/2023 U.S. Census Bureau data and CA Department of Finance records (RCI 2023qq). Transient quarters, such as dormitories, hotels, motels, or recreational vehicles, are not included.

**TABLE 5.11-3 REGIONAL RENTAL HOUSING STOCK AND VACANCY RATES
(TOTAL COUNTY AND COMMUTE DISTANCES)**

Location	Total Housing Units	Rental Housing (% of Housing)	Vacant Units	Rental Vacancy Rate (%)
Total Fresno County	336,509	44%	4,621	3.1%
Fresno County Areas within 60-minute Commute				
City of Fresno	183,951	52%	3,157	3.3%
Clovis	40,815	34%	527	3.8%
Mendota	3,065	60%	29*	1.6%*
Kerman	4,492	51%	0*	0.0%*
Coalinga	4,812	40%	65*	3.4%*
San Joaquin	879	80%	22*	3.2%*
Tranquility CDP	218	32%	0	0%*
Cantua Creek CDP	129	64%	0	0%*
Total Madera County	49,512	31%	535	3.5%
Madera County Area within 60-minute Commute				
Madera	18,588	48%	258	2.9%
Total Kings County	46,145	43%	320	1.6%
Kings County Areas within 60-minute Commute				
Hanford	19,215	38%	66*	0.9%
Lemoore Station CDP	1,588	93%	0	0
Vacancy Total	432,166	N/A	5,476	N/A
Total Area Within 60-minute Commute				
	277,392	N/A	4,124	N/A

Notes: CDP - Census-designated place, * - indicates less than 90% confidence level in the vacancy rate. N/A- not applicable

Sources: ESRI, 2023; CA Department of Finance, 2025

The number of transient housing units was also considered (hotels/motels, recreational vehicles (RV) sites). Most hotels are located in the city of Fresno and its suburbs, supporting tourism in the summer and seasonal workers during the growing season, and many hotels/motels are fully booked (Rincon 2024qq). Data for the Fresno-Madera

MSA indicates that the average number of vacancies over a 12-month period 2015 through 2023 fluctuated between 3,000 and 6,000 rooms; however, vacancy rates at hotels/motels in western Fresno County are much lower during the growing season when nearby hotels/motels can be fully booked. A total of 27 RV parks supporting 2,415 RV sites were identified in Fresno, Kings, and Madera counties totaling 2,197 sites, with managers at some sites reporting vacancy rates during agricultural seasons. Some reported vacancy rates of 50 to 100 percent, with lower rates during the growing season. A conservative estimate of 25 percent was used to estimate availability throughout the year.

Table 5.11-4 summarizes the short-term rental and transient housing units in the three-county study area.

TABLE 5.11-4 ESTIMATED TOTAL SHORT-TERM AND TRANSIENT HOUSING SUPPLY WITHIN THE THREE-COUNTY STUDY AREA

Location	Rental Housing Units	Hotel/Motel Rooms	RV Sites	Total Vacant Housing Units ¹
Fresno County	4,621	3,000*	535	8,018
Madera County	535	(see above)	127	359
Kings County	320	--	23	89
Total	5,476	3,000	549	8,679

*A total of 9,000 hotel/motel rooms was identified in the Fresno MSA, Madera MSA, and Kings County with an average vacancy rate exceeding 60 percent Sources: Rincon, 2024qq; Department of Finance, 2025

The rental and transient housing supply in the three-county study area is limited, and especially low-income housing. Transient supply is especially limited during the growing period from February through June. However, housing supply would be available for transient construction workers who would commute to the job site or set up temporary housing during the construction period and site workers.

Labor Supply. The local economy in the Fresno area has historically concentrated on agriculture and related industries. Today agriculture is still a leading producer and employer, supporting a variety of other industries. However, the economy is diversifying in Fresno County in particular, with transportation and warehousing a growing industry. Education and health services remains the leading sector from an employment perspective (see **Table 5.11-5**).

TABLE 5.11-5 EMPLOYMENT DISTRIBUTION BY INDUSTRY IN THE STUDY AREA - COUNTIES

Industry	Employment Share			
	Fresno County	Madera County	Kings County	California
Education & Health Services	29%	28%	27%	25%
Wholesale & Retail Trade	13%	8%	9%	13%

¹ All values rounded.

TABLE 5.11-5 EMPLOYMENT DISTRIBUTION BY INDUSTRY IN THE STUDY AREA - COUNTIES

Industry	Employment Share			
	Fresno County	Madera County	Kings County	California
Professional & Business Services	10%	6%	4%	16%
Agricultural, Forestry, Fishing and Hunting	10%	22%	14%	2%
Leisure & Hospitality	8%	11%	12%	10%
Manufacturing	7%	6%	11%	8%
Public Administration	6%	6%	6%	6%
Construction	5%	4%	3%	5%
Transportation, Warehousing & Utilities	5%	2%	4%	5%
Financial Activities	4%	1%	2%	5%
Other Services	4%	3%	3%	3%
Information	1%	1%	0%	4%

Source: Rincon 2023qq; US Census Bureau, 2020b

In 2015, Fresno County published an economic development plan that called for a diversification of the economy away from agriculture and into other higher paying sectors, including healthcare and information technology (Fresno EDC, 2015). It also called for an increase in manufacturing related to agricultural processing. While the manufacturing and information sectors have remained steady in their share of employment over the last four years, the number of healthcare jobs has increased by 1.3 percent (US Census Bureau, 2020b).

Table 5.11-6 presents the California Employment Development Department 2020-2030 Occupational Employment Projections for most construction occupations associated with the proposed project in the Fresno, Madera, and Kings counties. The projections are estimates of the expected employment for individual occupations. For the year 2030, the total projected employment estimate of the construction occupations within the MSAs for Fresno, Madera, and Kings counties would total 39,780 workers (CA EDD, 2025).

TABLE 5.11-6 PROJECTED EMPLOYMENT GROWTH

Fresno, Madera, and Hanford-Corcoran (Kings County) MSAs	Year 2020	Year 2030	Percent Change
Carpenters	3,270	3,700	13.1%
Cement Masons and Concrete Finishers	820	900	9.8%
Construction Laborers	3,380	3,970	17.5
Construction Trades Workers	15,040	17,190	14.3
Electrical/Electronic Equipment Mechanics, Installers, and Repairers	1,480	1,570	6.1
Electrical Power Line Installers and Repairers	170	180	5.9
Electricians	1,740	2,050	17.8
First-Line Supervisors of Construction Trades and Extraction Workers	1,450	1,650	13.8%
Heavy and Tractor-Trailer Truck Drivers	8,460	10,370	22.6

TABLE 5.11-6 PROJECTED EMPLOYMENT GROWTH

Fresno, Madera, and Hanford-Corcoran (Kings County) MSAs	Year 2020	Year 2030	Percent Change
Operating Engineers and Other Construction Equipment Operators	890	1,000	12.4
Other Construction and Related Workers	1,040	1,150	10.6%
Plumbers, Pipefitters, and Steamfitters	1,210	1,360	12.4%
Roofers	460	530	15.2
Security and Fire Alarm System Installers	170	190	11.8%
Solar Photovoltaic Installers	200	340	70.0%
Total	39,780	46,150	16.0%

Note: Long-term (10 year) projections are based on annual average employment levels by industry for the base (2020) and target (2030) years. Source: CA EDD, 2025.

Public Services

The study area for public services-related impacts is Fresno County. The project site would be located on former agricultural lands within the Westlands Water District that were retired due to insufficient water supplies or within right-of-way. Following construction, portions of the project site would be restricted, such as the solar array and BESS.

Fire and police protection services are provided to the project site from departments within Fresno County. Park facilities and other public facilities such as libraries are also provided by the County. The project site is within the Golden Plains Unified and Westside Elementary school district boundaries.

Public services and facilities assessed in this section include law enforcement, fire protection, emergency response, medical facilities, school districts, parks and recreation, and hospitals.

Fire Protection and Emergency Response. The project site falls within the jurisdiction of the Fresno County Fire Protection District (FCFPD). FCFPD's District Operations Division includes 14 two- to three-person engine companies, two full-time fire stations, a rescue unit, and two water tenders. The District provides a full range of emergency response services including, but not limited to: structural fire suppression, wildland fire suppression, response to hazardous materials incidents, urban search and rescue, water rescue, vehicle extrication, technical rescue, and basic life support medical services (Fresno, 2025b). **Table 5.11-7** includes a list of relevant battalions and stations closest to the project site.

TABLE 5.11-7 FRESNO COUNTY FIRE RELEVANT RESPONSE DISTRICT OPERATIONS

Battalion	Station	Address
Battalion 14	Fresno County Fire Station 93	36421 S. Lassen, Huron, CA 93234
	Fresno County Fire Station 94	24125 W. Dorris, Coalinga, CA 93210
Battalion 91	Fresno County Fire Station 90	2701 W. Tahoe Avenue, Caruthers, CA 93609
	Fresno County Fire Station 95	25101 Morton Street, Tranquility CA 93668

TABLE 5.11-7 FRESNO COUNTY FIRE RELEVANT RESPONSE DISTRICT OPERATIONS

Battalion	Station	Address
	Fresno County Fire Station 96	101 McCabe, Mendota, CA 93640

Source: Fresno, 2025b

Each year, FCFPD responds to approximately 14,000 incidents, approximately 68 percent of which are medical in nature. All FCFPD personnel are equipped to provide Basic Life Support (BLS) services. In response to emergency calls, FCFPD employs a closest-forces concept, through which the closest engine company is dispatched along with an ambulance provider. Depending on the distance of the injured patient to medical facilities, FCFPD may deploy helicopters to facilitate transportation to hospitals (Fresno, 2025b).

Response times were calculated by Fresno County Fire through a simulation of a single-engine response to a point at the center of the project site near the Elkhart and Butte intersection. Actual times may differ from these estimations, contingent on access points, road types, and weather conditions. For the Elkhorn and Butte intersection, the first-alarm commercial fire response times range from 30 minutes to 45 minutes.

Variables such as gate access locations and road conditions within the project significantly impact response times; paved roads are fastest, followed by gravel, while dirt roads, especially after rain, may require Four-Wheel Drive (4WD). However, the district's standard engines lack 4WD capability, which specialized small 4WD vehicles possess but lack the necessary pump and tank capacity for structural fire apparatus.

The ambulance stationed nearest to the project site would be in the City of San Joaquin, with a typical response time of 10 to 12 minutes.

Police Protection. The Fresno County Sheriff's Office provides patrol services for four distinct patrol areas (**Table 5.11-8**), each of which is overseen by a lieutenant who supervises field services from a local substation (Fresno County Sheriff's Office, 2025a). Due to budget reductions, deputies and detectives still work out of the four substations, but they are closed to the public (Fresno County Sheriff's Office, 2025a). The project site is situated within Area 1, which is located in the City of San Joaquin and encompasses 2,400 square-miles that include the incorporated communities of San Joaquin, Coalinga, Huron, Kerman, Mendota, and Firebaugh and the unincorporated communities of Tranquility, Biola, Five Points, Helm, Three Rocks, Cantua Creek, and Dos Palos. Fresno County is situated within Mutual Aid Region V. The California Office of Emergency Services (OES) coordinates the statewide mutual aid systems for fire response, law enforcement, and telecommunications. Each region in the state has a designated coordinator—in the case of Region V who handles mutual aid requests from the state as well as from within the individual region. During emergencies, OES activates the State Operations Center in Sacramento and the Regional Emergency Operations Centers in areas impacted by the emergency to receive, process, and respond to local requests (Fresno County Sheriff's Office, 2025b).

Estimated law enforcement response times are based on approximate travel times from the Fresno County Sheriff's Office Area One Substation to the project site. Drive times from the City of San Joaquin to the northern, southern, western, and eastern borders of the project and the western satellite area range from 8 minutes to 25 minutes. If units were on a call in the eastern part of the Office's area of responsibility, response times could range from 45 minutes to an hour. All response times are subject to change depending on various factors, including but not limited to poor weather conditions, emergency calls for service, active unrelated law enforcement operations, and active/ongoing priority law enforcement investigations.

TABLE 5.11-8 FRESNO COUNTY ENFORCEMENT AREA SUBSTATIONS

Area / Substation	Address
Fresno County Sheriff's Office	2200 Fresno Street, Fresno, CA 93721
Area 1: Substation 1	21925 W. Manning Avenue, San Joaquin, CA 93660
Area 2: Substation 2	1129 N. Armstrong Avenue, Fresno, CA 93727
Area 3: Substation 3	1065 Golden State Boulevard, Selma, CA 93662
Area 4: Auberry Substation	33155 Auberry Road, Auberry, CA 93602
Area 4: Telen Substation (Closed)	30691 E. Kings Canyon Road, Squaw Valley, CA 93675

Source: Fresno County Sheriff's Office, 2025a.

Schools. The Fresno County Office of Education serves 31 school districts and more than 200,000 students during the 2023-2024 academic year (Fresno County Office of Education, 2025) (Education Data Partnership, 2025). The project site falls within two unified school districts: Golden Plains Unified School District and Westside Elementary District. **Table 5.11-9** identifies the nearest schools to the project site. The nearest school to the project site is Cantua Elementary, at four miles northwest.

TABLE 5.11-9 SCHOOL DISTRICTS AND SCHOOLS

School	District	Distance From Project Site
Cantua Elementary	Golden Plains Unified	4 miles northwest
Helm Elementary	Golden Plains Unified	4 miles northeast
San Joaquin Elementary	Golden Plains Unified	11.56 miles northeast
Tranquility Elementary	Golden Plains Unified	8 miles northeast
Tranquility High	Golden Plains Unified	8 miles northeast
Westside Elementary	Westside Elementary District	3 miles south

Source: Education Data Partnership, 2025

Parks and Recreation. Fresno County includes twelve parks and fishing access areas, and a boat launch facility at Shaver Lake (Fresno County Parks and Recreation, 2025). The nearest facilities to the project area include Los Gatos Creek Park, the Three Rocks Fishing Access, and the Huron Fishing Access.

Two state parks are also located in the three-county study area: The Millerton Lake State Recreation Area spans the San Joaquin River and includes portions of Fresno and Madera. The park offers camping, boating, and other outdoor activities. The Wassama

Round House State Historic Park is used by local Native Americans as a ceremonial meeting place and offers special events and tours (California State Parks, 2025).

Hospitals. There are four hospitals in the city of Fresno. The Fresno Community Regional Medical Center is the only Level-1 trauma center between Los Angeles and Sacramento, serving patients across multiple counties (Community Regional Medical Center, 2025), and it is the nearest hospital to the project site. It is the fifth largest and third busiest hospital in the state, with a capacity of 685 licensed beds and an average of approximately 663 inpatients a day (Community Regional Medical Center, 2025). Although most hospitals within a 50-mile radius of the project site are in Fresno County, four hospitals—Adventist Health Hanford, Adventist Health Tulare, Madera Community Hospital, and Kaweah Health Medical Center—are situated outside the county boundary. The closest hospital in proximity to the project site is Adventist Health Hanford in Kings County, followed closely by Community Regional Medical Center in Fresno County.

Drive times between major hospitals in the region and the project site range from 30 minutes to an hour and 10 minutes, with an average travel duration from the project site to the medical facility of approximately 60 minutes. Travel times are influenced by traffic patterns and other factors. The Central California Emergency Medical Services (EMS) Agency provides EMS services in Fresno, Kings, Madera, and Tulare counties. EMS dispatchers identify the nature of each emergency, dispatch appropriate law enforcement personnel, or transfer callers to a regional fire service or ambulance dispatch center (Fresno County Public Health, 2023a). The Fresno County Area is served by 16 ambulance provider agencies. An air ambulance service and air rescue service also reside in the region. (Fresno County Public Health, 2025b).

Regulatory

Federal

No federal regulations related to Socioeconomics apply to the project.

State

California Education Code

Section 17620. The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.

California Government Code

Sections 65995-65998. Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

Local

Fresno County Development Impact Fees

The County charges various development impact fees for industrial development².

Cumulative

The geographic scope for the analysis of cumulative impacts on Socioeconomics is Fresno County. This is defined as the cumulative impact area because socioeconomic factors such as public services are provided by local jurisdictions or districts, and available housing is located within Fresno County. Additionally, the local workforce is expected to come from within Fresno, Madera and Kings counties.

Construction of the proposed project would not lead to a temporary or permanent increase in the study area population. As shown in **Table 5.11-1**, the three-county project area included a population of approximately 1.3 million in 2023, more than 1 million of which lived in Fresno County. As identified in **Table 5.11-6**, more than 39,000 construction workers with the skills anticipated for project construction resided in the study area in 2020, and the number of workers is anticipated to increase to more than 46,000 by 2030. Most, if not all, of the workforce is anticipated to reside in the study area and would not be expected to relocate to be nearer to the project site. As shown in **Table 11.5-4**, workers seeking temporary lodging within a 60 minute-commute time would be likely to find temporary housing from vacant housing or transient housing stock. No temporary or permanent change in population would occur to necessitate the need for new housing, schools, or recreational facilities.

As discussed in **Section 5.14, Transportation**, roads in the vicinity of the project site are capable of supporting proposed construction traffic, and neither new nor modified roads would be provided.

Previous growth and development through 2023 have affected the availability of housing and public services within the study area. When the population increases because of development, the housing demand, workforce, and public services expand to accommodate the growing population and development needs. As discussed in the “Environmental Setting” subsection, the population of Fresno County is projected to grow, albeit at a decreasing rate, until 2050. The population of Madera and Kings counties is projected to do the same until 2040. (CA DOF 2023a, 2023b).

As discussed in “Environmental Setting” above, the construction employment trends have increased and are expected to continue. Construction and operation of the proposed project in conjunction with the projects described in **Table A-1** could result in the potential for impacts to population, housing, and public services in the county. While it is not expected that the operation of the energy projects listed would

² See fee schedule at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/19237-fee-schedule.pdf>

substantially change the population and housing dynamics in the county, the number of construction projects described in **Table A-1** would have the potential to impact population trends and could be cumulatively considerable.

Projects. The project description provided by the applicant does not specify what years the project would be under construction, but it is assumed it would likely take place almost immediately following project approval. Only those related projects under construction during that period would be considered for cumulative impacts of the construction population on housing and public services. All projects in **Appendix A, Table A-1** are located within the geographic scope for Socioeconomic cumulative effects, and thus are considered for co-location impacts.

5.11.2 Environmental Impacts

SOCIOECONOMICS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Police Protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SOCIOECONOMICS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, population and housing, public services, and recreation.

5.11.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Significant impacts are determined on an individual basis depending on the magnitude of the effects. An example of a potentially significant impact for this area would be the need for a new fire or sheriff's station, as determined by public safety authorities.

Thresholds of Significance

The potential for impacts to socioeconomics were evaluated using the criteria described in Appendix B of the Guidelines for Power Plant Site Certification (CEC, 2021) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The criteria are derived from the CEC requirements and questions in the CEQA checklist addressing population, housing, government facilities and services. Following the guidance that the questions are "intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance" the discussion focuses on characterizing the economic and social changes that would result from the project, both potentially beneficial and adverse. Additional detailed analysis is presented in the Appendices to this report where relevant to support the impact summary provided below.

5.11.2.2 Direct and Indirect Impacts

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes

and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction— *Less Than Significant Impact*

Based on the analysis below, construction of the project would not induce substantial unplanned population growth in the study area, either directly or indirectly, and the impact would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

As described in **Section 3, Project Description**, the proposed project would be constructed during either a 36-month construction period, which would require an estimated peak workforce of 1,200 daily construction workers, or during an 18-month construction period that would require an estimated peak workforce of 1,500 construction workers. The size of the proposed workforce was calculated early in the project and presents a conservative workforce estimate, as the construction of a proposed green hydrogen facility was subsequently eliminated from the proposed project. Construction of the proposed project would not lead to a temporary or permanent increase in the study area population. As shown in **Table 5.11-1**, the three-county project area included a population of approximately 1.3 million in 2023, more than 1 million of which lived in Fresno County. As identified in **Table 5.11-6**, More than 39,000 workers with the skills anticipated for project construction resided in the study area in 2020, and the number of workers is anticipated to increase to more than 46,000 by 2030. Most, if not all, of the workforce is anticipated to reside in the study area and would not be expected to relocate to be nearer to the project site. As shown in **Table 11.5-4**, workers seeking temporary lodging within a 60-minute commute time would be likely to find temporary housing from vacant housing or transient housing stock. No temporary or permanent change in population would occur in association with the maximum 1,500-person construction work force to necessitate the need for new housing, schools, or recreational facilities.

As discussed in **Section 5.14, Transportation**, roads in the vicinity of the project site are capable of supporting proposed construction traffic, and neither new nor modified roads would be required.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of the proposed project, including the switchyard and downstream upgrades would not lead to a temporary or permanent increase in the study area population. The three-county project area included a population of approximately 1.3 million in 2023, and the addition of a maximum 1,500 construction workers would likely be drawn from the study area. More than 39,000 construction workers with the skills anticipated for project construction resided in the study area in 2020, and the number of workers with those skills is anticipated to increase to more than 46,000 by 2030. Most, if not all, of the workforce is anticipated to reside in the study area and would not be

expected to relocate to be nearer to the project site. Workers seeking temporary lodging within a 60-minute commute time would be likely to find temporary housing from vacant housing or transient stock. No temporary or permanent change in population would occur in association with the project's maximum 1,500-person construction work force to necessitate the need for new housing, schools, or recreational facilities.

Roads in the vicinity of the project site are capable of supporting proposed construction traffic, and neither new nor modified roads would be provided.

Operation— *Less Than Significant Impact*

Based on the analysis below, operation of the project would not induce substantial unplanned population growth in the study area, either directly or indirectly, and the impact would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

As described in **Section 3, Project Description**, the proposed project would operate 365 days per year, with a total of 16 permanent staff to support solar facility and BESS as well as 33 intermittent workers to perform routine maintenance and repairs. Security equipment would be monitored remotely. It is anticipated that the labor force within the study area would be sufficient to support the permanent and intermittent employees, and the population in the study area would not increase by any discernable amount.

PG&E Utility Switchyard and Downstream Network Upgrades

No additional work force is anticipated in association with the operation of the switchyard or network upgrades. No direct or indirect impact would occur.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction— *Less Than Significant Impact*

Based on the analysis below, construction of the project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and the impact would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Most if not all of the maximum 1,500-person construction workforce required for all proposed project components would be drawn from the three-county study area. If workers are drawn from a larger geographical area or need to restrict commute times to 60 minutes or less, vacant housing, hotel rooms, or RV sites were identified.

The applicant correctly noted that housing in western Fresno County can be difficult during the growing season (February to June) as temporary agricultural workers arrive and remain for the growing season, which could significantly reduce the number of available nearby hotel rooms or RV sites; however, the number of locally based construction workers in the project with the necessary skills required for the proposed project exceeds 39,000 and is growing. If a portion of the workforce wishes to move nearer to the project area for the construction period, hotel accommodations are available in the Fresno metropolitan area. The potential to cause indirect impacts that could displace agricultural workers seeking housing in western Fresno County is low.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of all facilities, including the utility switchyard and downstream network upgrades would require a maximum workforce of 1,500 workers. It is assumed that workers would be drawn from the study area and would not require lodging.

The number of locally based construction workers in the project with the necessary skills required for the proposed project exceeds 39,000 and is growing. In the event that a portion of the construction workforce wishes to move nearer to the project area for the construction period, ample hotel accommodations are available in the Fresno metropolitan area. The potential to cause indirect impacts that could displace agricultural workers seeking housing in western Fresno County is low.

Operation— Less Than Significant Impact

Based on the analysis below, operation of the project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and the impact would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation of the proposed solar facility, battery energy storage system (BESS), step-up substation, operations and maintenance (O&M) facility, and gen-tie line would employ a workforce of 16 employees, which would likely be drawn from the study area population. The available housing stock in Fresno County could accommodate the additional permanent workers. The additional 33 intermittent workers associated with facility operation would likely be drawn from the study area. If temporary lodging is necessary, hotels in the Fresno metropolitan area could accommodate the workers.

PG&E Utility Switchyard and Downstream Network Upgrades

Operation of the utility switchyard or downstream network upgrades would not require its own operational workforce, so would not generate demand for housing.

c. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered

governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Construction— *Less than Significant with Mitigation Incorporated*

Based on the analysis below, construction of the project would have less than significant impacts with mitigation incorporated associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities.

Fire and Police Protection

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction of the Solar Facility, BESS, Step-Up Substation, and Generation-Intertie could result in an increased demand on law enforcement, fire protection, and EMS services during the construction period. The presence of up to 1,500 construction workers in western Fresno County to construct the facilities could increase the risk of emergency incidents requiring public safety or medical attention and increase the frequency of emergency responses to the project site. In addition, the number of workers commuting to the project site may have the potential to increase the risk of traffic accidents and other travel and transportation issues on local roads in the study area.

Construction activities could lead to an increased need for law enforcement and emergency response. The Fresno County's Sheriff's Department is already at capacity, and project site is also located in an area of lower coverage compared to other portions of the county; both battalions 14 and 15 are distant from the project site, with no fire station near Cantua Creek. Site-related emergencies may result in longer response times than other areas of the County.

To reduce the potential impacts associated with project-related emergency response need to less than significant, staff proposes several conditions of certification (COCs) to prevent or avoid potential construction-related emergencies associated with hazard materials use, and site security. The following COCs were identified in **Section 5.7, Hazards, Hazardous Materials, and Wildfire** and summarized below:

- **HAZ-1** The project owner shall prepare a Hazardous Materials Business Plan (HMBP) and a Spill Control and Countermeasure Plan (SPCC) and provide these plans to Fresno County HazMat Compliance Program for review and comment and to the Compliance Project Manager (CPM) for review and approval.
- **HAZ-4** Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval.

- **HAZ-5** The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that would be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage.

As described in **Section 4.4, Worker Safety and Fire Protection**, staff discussed emergency response capabilities with the FCFPD (Fresno 2025a), who confirmed that the west side of Fresno County lacks the resources to respond to fire, rescue, and medical services emergencies to the existing towns and energy facilities in an appropriate time (Fresno 2025a). In addition, most existing and proposed solar PV projects exist in the western part of Fresno County (Fresno County 2024a). Staff determined that mitigation was necessary and developed **WORKER SAFETY-1** through **WORKER SAFETY-10**.

As identified in **Section 5.14, Transportation**, the potential for the proposed project to affect emergency access is less than significant. The project does not propose changes to any existing roadways or intersections during construction or operation, and emergency vehicles would maintain right-of-way over construction vehicles. Construction activities would not prevent access for emergency vehicles. The addition of project-generated traffic during construction along study roadways and at study intersections would have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles.

The implementation of the COCs identified in **Section 5.7, Hazards, Hazardous Materials, and Wildfire** would prevent the need for additional law enforcement, fire protection, or other emergency response services to accommodate the proposed project. The project would not require new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.

PG&E Utility Switchyard and Downstream Network Upgrades

Similar to other facility components as described above, the construction of the utility switchyard and downstream network upgrades could result in increased demand on law enforcement, fire protection, and EMS services. The implementation of **MM HAZ-1**, would reduce this potential impact to less than significant.

Schools, Parks, and Other Public Facilities

Solar Facility, Battery Energy Storage System, Step-up Substation, O&M Facility, and Generation-Intertie Line

Construction of the proposed solar facility, BESS, step-up substation, and generation-intertie would not result in any adverse impacts on schools, parks or other public facilities. As previously identified, nearly all construction workers are anticipated to be drawn from the three-county project study area. Few if any workers would relocate

their families to western Fresno County for the construction duration to create the need for additional schools, parks, or other facilities.

PG&E Utility Switchyard and Downstream Network Upgrades

As discussed above, the proposed project is anticipated to draw construction workers from the study area, therefore, construction of the utility switchyard and downstream network upgrades would not result in any adverse impacts on schools, parks, or other public facilities.

Operation— Less than Significant with Mitigation Incorporated

Based on the analysis below, operation of the project would have less than significant impacts with mitigation incorporated associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities.

Police and Fire Protection

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation of the solar facility, Step-up substation, BESS, O&M Facility, and Generation-Intertie could result in an increased demand for law enforcement, fire protection and EMS services because of trespass, vandalism, and theft. Once constructed, the BESS could increase the risk of fire compared to existing and use conditions.

The impact to public services could be mitigated through the implementation of a security system with active surveillance (either on-site or by video) with which local law enforcement can integrate and coordinate response and deterrent measures. Implementing and maintaining site design, vegetation management practices as described in **Section 3, Project Description** and the implementation of a site-specific security plan as identified by **HAZ-5** would reduce the risk of fire and trespass and reduce the need for first response services.

PG&E Utility Switchyard and Downstream Network Upgrades

Operation of the utility switchyard and downstream network upgrades could result in an increased demand on law enforcement, fire protection and EMS services. The utility switchyard would be surrounded by a new security wall or chain link barbed wire security fence up to approximately 20-feet in height with a secure gate accessible only by PG&E staff (IP 2024n). The implementation of these site security features would reduce the need for law enforcement, fire protection, and EMS services resulting from trespassing or vandalism. Vigilant vegetation management would also reduce the potential for fire hazards as identified in the project description.

Schools, Parks, and Other Public Facilities

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

As identified in **Section 3, Project Description**, a total of 16 full-time workers would be associated with project operation (solar and BESS facilities), and a total of 33 intermittent workers would be associated with solar panel washing, facility maintenance and repairs and vegetation management.

The proposed project site spans two unified school districts, the Golden Plans Unified School District and the Westside Elementary District. Five elementary schools and Tranquility High School are located within 12 miles of the project site. No additional schools would be needed. The County of Fresno includes sixteen parks or boat launch facilities, and two state parks are located in the study area. The addition of 16 full-time workers and their families would not create a need for additional parks or other recreation facilities.

Although no project-related impacts to schools would occur, the applicant would comply with necessary regulations and ordinances associated with the development fees, which would result in a positive impact/benefit to the local school districts.

PG&E Utility Switchyard and Downstream Network Upgrades

As discussed above, the proposed project is anticipated to draw operations workers from the study area, and no full-time staff would be required to operate the PG&E switchyard or downstream network upgrades, therefore, operation of the utility switchyard and downstream network upgrades would not result in any adverse impacts on schools, parks or other public facilities.

d. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction— Less than Significant Impact

Based on the analysis below, the project's increase of the use of existing parks and recreational facilities during construction would have a less than significant impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

Fresno County includes 16 recreational facilities including parks, fishing access, and the Shaver Lake Boat Launch, and two state parks are located in the three-county study area.

As identified in **Section 3, Project Description**, a peak workforce of approximately 1,200 persons would be required during the 36-month project schedule, and a peak

workforce of 1,500 persons would be required during the 18-month project schedule, and most or all would likely be drawn from the three-county study area. Those living in the study area would already use existing state, county, or local parks and no change in facility use would occur to accelerate facility deterioration.

Some construction workers may visit nearby park or recreational facilities before or after a workday, but this increased use would cease at the end of the construction period. It is unlikely that there would be an increase in the usage of, or demand for, other park or recreational facilities to maintain acceptable service ratios or other performance objectives. A temporary increase in the use of nearby parks or recreational facilities during the construction period is unlikely to cause substantial physical deterioration the acceleration of facility deterioration. The region is already accustomed to significant population fluctuations from migratory agricultural workers, so the effect of the influx of workers may not be as dramatic as it could be in other places with a more consistent population.

PG&E Utility Switchyard and Downstream Network Upgrades

As described previously, most construction workers would be drawn from the existing three-county project area and would not relocate to the project site. Some construction workers may visit nearby park or recreational facilities before or after a workday, but this increased use would cease at the end of the construction period. It is unlikely that there would be an increase in the usage of, or demand for, other park or recreational facilities to maintain acceptable service ratios or other performance objectives. A temporary increase in the use of nearby parks or recreational facilities during the construction period is unlikely to cause substantial physical deterioration the acceleration of facility deterioration. The region is already accustomed to significant population fluctuations from migratory agricultural workers, so the effect of the influx of workers may not be as dramatic as it could be in other places with a more consistent population.

Operation— Less than Significant Impact

Based on the analysis below, the project's increase of the use of existing parks and recreational facilities during operation would have a less than significant impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

As previously identified, a total of 16 full-time workers would be associated with the proposed project. The addition of 16 employees and families to the project area could cause an incremental increase in the use of park or recreational facilities, which would be unlikely to accelerate their physical deterioration.

PG&E Utility Switchyard and Downstream Network Upgrades

The operation of the switchyard and downstream upgrades would not create the need for any additional employees. The proposed operation of the switchyard and

downstream network upgrade would not result in an increased use of parks or recreation facilities to accelerate their deterioration.

e. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Construction— *No Impact*

Based on the analysis below, construction of the project would not include recreational facilities or require the construction or expansion of recreational facilities, therefore no associated physical impact to the environment would occur.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line, PG&E Utility Switchyard and Downstream Network Upgrades

Recreation facilities are not included as part of the project. The proposed project would not require the construction or expansion of a recreation facility to accommodate temporary additional workers during construction.

Operation— *No Impact*

Based on the analysis below, construction of the project would not include recreational facilities or require the construction or expansion of recreational facilities, therefore no associated physical impact to the environment would occur.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line, PG&E Utility Switchyard and Downstream Network Upgrades

Recreation facilities are not included as part of the project, and the project would not require the construction or expansion of a recreation facility. The addition of 16 workers to operate the proposed project, some of which might reside in western Fresno County, would not create the need for new or expanded recreational facilities to serve them.

5.11.2.3 Cumulative Impacts

A review of the master list of cumulative projects located within Fresno County is provided in **Appendix A, Table A-1**. Eleven of the projects identified in **Table A-1** are similar to the proposed project and are in various stages planning, environmental review or construction. Six projects were identified as in review by Fresno County, indicating that they could be constructed in the same timeframe of the proposed project and were mostly likely to contribute to a cumulative impact:

- FC-9: Heartland Hydrogen Project, which is within 12.3 miles of the proposed project's solar facility and currently in environmental review by Fresno County.
- FC-13: Sonrisa Solar Project, which is 10.4 miles northwest of the proposed project's solar facility and currently in review by the Fresno County Planning Commission.

- FC-15: Luna Valey Solar, which is 12.7 miles north of the proposed project. The project has been approved, but it is not yet under construction.
- FC-16: H2B2 USA, LLC project, which includes a solar and BESS and is located 14.4 miles north of the solar facility. The project is in review by the Fres County Planning Commission.
- C-25: BayWa.r.e/Cornucopia Hybrid Solar Project, which is located 28 miles south of the proposed switchyard and under review by the Fresno County Planning Commission review.
- FC-28: San Luis West Solar Project, which is 22.6 miles south of the solar facility and in environmental review.

Although the timing of each project is uncertain, it is likely that at least two similar projects would be constructed concurrently with the proposed project, such as projects FC-9 and FC-28, which are also undergoing environmental review.

Cumulative Induced Growth

Construction— *Less Than Significant Impact*

The proposed project, when considered with the other proposed projects within 15 miles of the project site and in the same timeframe, would not lead to substantial unplanned population growth through extension of roads or other infrastructure.

Construction of the proposed project would require a workforce of approximately 1,200 or 1,500 persons, depending on the project schedule. As shown in **Table 5.11-6**, more than 39,000 construction workers with the skills anticipated for construction of the proposed project or similar solar projects resided in the three-county study area in 2020, and the number of qualified workers is anticipated to increase to more than 46,000 by 2030. This work force is well positioned to support numerous concurrent projects without creating a need for additional housing in the cumulative effects project area.

Operation— *Less Than Significant Impact*

Operation of the proposed project would require sixteen full-time, on-site employees, and it is likely that these employees would be drawn from the three-county study area. The proposed project, when considered with the other proposed projects within 15 miles of the project site and in the same timeframe, would not lead to substantial unplanned population growth through extension of roads or other infrastructure. As discussed in **Section 5.14, Transportation**, the level of service associated with local roadways are sufficient to accommodate cumulative trip generation near the project site, and additional roads are not needed. Operation of the proposed project would not contribute to a cumulative significant impact.

Displace Substantial Numbers of Existing People or Housing to Necessitate Replacement Housing Elsewhere

Construction— *Less Than Significant Impact*

As shown in **Table 11.5-4**, workers seeking temporary lodging would be likely to find vacant or transient housing stock. No permanent change in population would occur in association with the maximum 1,500-person locally based construction work force to necessitate the need for new housing, schools, or recreational facilities. If a portion of the workforce wished to move to the area within 60 minutes of the project site, sufficient temporary housing or hotel space could accommodate the temporary lodging.

Operation— *Less Than Significant Impact*

It is likely that the sixteen full-time workers associated with project operation would be drawn from the study area, and it is possible that some may move nearer to the project area. California Department of Finance records for Fresno County indicate that in 2024, the County included more than 47,000 permanent housing units (single-, multifamily units, and mobile homes) and a vacancy rate of 4.2 percent (CA DOF, 2025). Available housing stock can accommodate full-time employees associated with proposed project and similar projects in the study area. The proposed project would not contribute to a significant cumulative impact.

Environmental Impact Due to The Need for New Facilities to Maintain Acceptable Service Ratios (Fire Protection, Police Protection, Schools, Parks, or Other Facilities)

Construction— *Less Than Significant with Mitigation Incorporated*

Construction of the proposed project could increase the potential for increased risks to fire, site security, and emergency response. Increased construction-related traffic on nearby roads also has the potential to increase the risk of traffic incidents. As described earlier, staff reviewed and assessed emergency response capabilities in western Fresno County, discussed the proposed project with the FCFPD, and determined that mitigation would be required. Staff proposed COCs **HAZ-1, HAZ-4, HAZ-5, and WORKER SAFETY-1** through **WORKER SAFETY-10** to reduce the potential for incidents requiring emergency response in the event of an incident. The implementation of these measures would reduce the proposed project's contribution to a significant cumulative impact to less than significant.

Construction of the proposed project would not result in any adverse impacts on schools, parks, or other public facilities. As previously identified, nearly all construction workers are anticipated to be drawn from the three-county project study area. Few if any workers would relocate their families to western Fresno County for the construction duration to create the need for additional schools, parks, or other facilities.

The locally based workforce with the skills needed to construct the proposed project and similar projects is sufficient to support multiple projects concurrently. It is unlikely

that other locally based workers would relocate their families to western Fresno County to create the need for additional schools to create a need for additional school facilities.

Operation— *Less Than Significant with Mitigation Incorporated*

Operation of the proposed project could increase the demand for law enforcement, fire protection, and emergency response services through increased risk of trespass, vandalism, and theft, but it would not increase the need for schools, parks, or other facilities.

As described earlier, staff reviewed and assessed emergency response capabilities in western Fresno County, discussed the proposed project with the FCFPD, and determined that mitigation would be required. Staff proposed **MM HAZ-1**, and **COC HAZ-1, HAZ 4, HAZ-5**, and **WORKER SAFETY-1** through **WORKER SAFETY-10** (see **Section 5.7 Hazards, Hazardous Materials/Waste and Wildfire** and **4.4 Worker Safety and Fire Protection**). The implementation of these measures would reduce the proposed project's contribution to a significant cumulative impact to less than significant.

Cause an increase in the use of parks or recreational facilities to cause or accelerate substantial physical deterioration of the facilities

Construction— *Less Than Significant Impact*

The proposed project and similar concurrent projects are likely to rely on the locally based construction work force. It is anticipated that most workers would commute to the site daily. Such workers would continue to use the recreational facilities that are located near their homes. A few workers may wish to use the recreational facilities nearest to the project site either before or after work, but this would be temporary. Based on the size of the locally based work force, construction workers for concurrent projects would likely behave similarly. The potentially increased use of parks or recreational facilities by a portion of the proposed workforce during project construction is temporary and would not cause or accelerate the rate of substantial physical deterioration.

Operation— *Less Than Significant Impact*

The introduction of the project's 16 full-time employees in addition to a modest number of full-time employees of the cumulative projects to the local community would not cause an increase in the use of parks or recreational facilities to cause or accelerate substantial physical deterioration of the facilities. The proposed project would not contribute to a significant cumulative impact.

Include or Require the Construction or Expansion of Recreational Facilities Which Might Have an Adverse Physical Effect on The Environment

Construction– No Impact

Recreational facilities are not included as part of the project, and the project would not require the construction or expansion of a recreational facility. The proposed project would not contribute to a cumulative impact.

Operation– No Impact

Recreational facilities are not included as part of the project, and the project would not require the construction or expansion of a recreational facility to accommodate 16 full-time employees who could relocate to western Fresno County. The proposed project would not contribute to a cumulative impact.

5.11.3 Jurisdictional Project Components Conformance with Applicable LORS

Table 5.11-10 presents staff’s determination of conformance with applicable local, state, and federal laws, ordinances, regulations, and standards (LORS), including any proposed COCs, where applicable, to ensure the jurisdictional components of the project would comply with LORS. No federal regulations related to socioeconomics apply to the project. Staff concludes that with implementation of COCs, the proposed project would be consistent with all applicable LORS. The subsection below, “5.11.5 Proposed Conditions of Certification” contains the full text of the referenced conditions of certifications.

TABLE 5.11-10 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
State	
California Education Code, section 17620	
The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities. The one-time school development fee is calculated at \$0.84 per square foot of development on all categories of commercial or industrial development based on chargeable covered and enclosed space (Office of Public School Construction, 2024).	Yes. The applicant would pay associated fees as required by SOCIO-1 .
California Government Code, Sections 65995-65998	
Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.	Yes. The proposed project would not trigger any state and local public agency fees, etc. to offset the cost for school facilities. Therefore, the project is in conformance.

TABLE 5.11-10 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Local	
Fresno County Development Impact Fees	
The County charges various development impact fees for industrial development.	Yes. The proposed project may be subject to a Fresno County Development Impact Fees. Once the fee is paid, the project would be in conformance with this requirement.

5.11.4 Conclusions and Recommendations

As discussed above, with implementation of conditions of certification identified in the socioeconomics analysis and other topic areas, such as those associated with hazards and worker safety. Following the application of these COCs, the project would conform with applicable LORS. Staff recommends adopting the condition of certification as detailed in subsection "5.11.5 Proposed Conditions of Certification" below.

Impacts associated with the PG&E Utility Switchyard and Downstream Network Upgrades to be considered for permitting by CPUC would be less than significant and would not require MMs.

5.11.5 Proposed Conditions of Certification

The following proposed COC includes measures to ensure conformance with applicable LORS.

SOCIO-1 The project owner shall pay the one-time statutory school facility development fees as part of Education Code 17620.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide to the CPM proof of payment to the Office of Education of the statutory development fee.

5.11.6 Recommended Mitigation Measures

There are no recommended mitigation measures for socioeconomics.

5.11.7 References

CA Employment Development Department (EDD) 2025 – 2020-2030 Local Employment Projection Highlights, Fresno, Madera, and Hanford-Corcoran (Kings County) Metropolitan Statistical Areas. Available online at: <https://labormarketinfo.edd.ca.gov/data/employment-projections.html>

California Department of Health Care Access and Information 2025 – *Community Regional Medical Center – Fresno*. Available online at: <https://hcai.ca.gov/facility/community-regional-medical-center-fresno/>

California Dept of Finance 2023 – *Projections*. Available online at: <https://dof.ca.gov/forecasting/demographics/projections/>

- California Dept. of Finance 2025 – *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024*. Available online at: <https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2024/>
- California State Parks 2025 – Find a State Park. Available online at: <https://www.parks.ca.gov/Find-a-Park>
- Community Medical Centers 2025 – *About Community Regional Medical Center*. Available online at: <https://communitymedical.org/specialties-and-departments/trauma-center>
- Education Data Partnership 2025 – *Fresno County*. Available online at: <https://www.ed-data.org/county/Fresno>
- ESRI 2023 – *ESRI Demographic and Income Profile*. Retrieved from ARCGIS Business Analyst. Available online at: <https://www.esri.com/en-us/arcgis/products/arcgis-business-analyst/overview>
- Fresno 2025a – Fresno County Fire Protection District (TN 261486). Comments from Fresno County Fire Protection District on Darden Clean Energy Project. Dated January 31, 2025. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Fresno 2025b – Fresno County Fire Protection District. *District Operations*. Available online at: <https://www.fresnocountyfire.org/district-operations>
- Fresno County Office of Education 2025 – *Districts*. Retrieved from Fresno County Superintendent of Schools. Available online at: <https://www.fcoe.org/districts>
- Fresno County Public Health 2025 – *EMS Overview*. Retrieved from Fresno County. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Health/Emergency-Services/Administration-of-EMS/EMS-Overview>
- Fresno County Public Health 2025b – *Fresno County Operations*. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Health/Emergency-Services/Fresno-County-Operations>
- Fresno County Sheriff's Office 2025 – *Patrol Areas*. Available online at: <https://www.fresnosheriff.org/units/enforcement/patrol-areas.html>
- Fresno County Sheriff's Office 2025b – *Mutual Aid*. Available online at: <https://www.fresnosheriff.org/units/enforcement/mutual-aid.html>
- Fresno County, Resources and Parks Division 2025 – Welcome to Fresno County Parks. Retrieved from Fresno County. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/resources-and-parks-division/parks>
- Fresno EDC 2015 – *County of Fresno Comprehensive Economic Development Strategy*. Retrieved from Fresno County. Available online at: <https://www.fresnocountyca.gov/Departments/County-Administrative-Office/Economic-Development>

- IP 2024n – Intersect Power (TN 260642). Updated Project Description December 2024. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023qq – Rincon Consultants, Inc. (TN 254588). Appendix M Socioeconomics Study. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- US Census Bureau 2020a – *Quick Facts*. Available online at: <https://www.census.gov/quickfacts/fact/table/fresnocountycalifornia,CA,US/POP060220>
- US Census Bureau 2020b – *On The Map Area Profile, Fresno County*. Retrieved from US Census On The Map. Available online at: <https://onthemap.ces.census.gov/>
- US Census Bureau 2021a – *DP05 ACS Demographic and Housing Estimates*. Available online at: <https://data.census.gov/table?q=DP05:+ACS+Demographic+and+Housing+Estimates>
- US Census Bureau 2021b – *DP04 Selected Housing Characteristics*. Available online at: <https://data.census.gov/table?q=DP04>
- US Census Bureau 2022 – Annual Estimates of the Resident Population for Counties in California: April 1, 2020 to July 1, 2022. *American Community Survey*. Available online at: <https://dof.ca.gov/reports/demographic-reports/american-community-survey/>
- US Census Bureau 2023 – *Quick Facts*. Retrieved from US Census Bureau Quick Facts. Accessed in 2023. Available online at: <https://www.census.gov/quickfacts/fact/table/CA,kingscountycalifornia,maderacountycalifornia,fresnocountycalifornia,US/POP010210>

5.12 Solid Waste Management

5.12.1 Environmental Setting

The project would be located in unincorporated Fresno County, approximately 25 miles southwest of Fresno, California, and 5 miles east of the community of Cantua Creek. The project would cover approximately 9,500 acres of agricultural land between South Sonoma Avenue to the west and South Butte Avenue to the east currently owned by the Westlands Water District (RCI 2023ff). The project would include a solar photovoltaic (PV) panel field, a battery energy storage system (BESS), an operation and maintenance (O&M) facility, and a step-up substation. The Project's gen-tie line would span approximately 10 to 15 miles west from the intersection of South Sonoma Avenue and West Harlan Avenue to immediately west of Interstate 5, where it would connect to the new utility switchyard along PG&E's Los Banos-Midway #2 500 kV transmission line. According to the Fresno County zoning geoportal website, the entire project area is zoned as exclusively agriculture (Fresno County 2024c).

Solid Waste Generation and Disposal

Nonhazardous solid waste would be recycled or disposed at a Class II/III facility. Third party vendors would be employed by the project to manage the handling and disposal of solid waste. The following materials recovery facilities (MRF) are within a 50-mile radius of the project site that could be utilized for the project (CalRecycle 2024):

- Mid-Valley Disposal & Transfer Recycling Station (SWIS No. 10-AA-0201) – Permitted capacity 49,000 cubic yards (CY), daily throughput 1,500 tons.
- Mid-Valley Recycling (SWIS No. 10-AA-0188) – Permitted daily capacity 2,000 tons, daily throughput 2,000 tons. Facility does not accept construction/demolition waste.
- Allan Company Fresno MRF (SWIS No. 10-AA-0229) – Permitted daily capacity 1,250 tons, daily throughput 1,000 tons.
- Cedar Avenue Recycling & Transfer Station (SWIS No. 10-AA-0187) – Permitted daily throughput 3,100 tons.
- West Coast Waste (SWIS No. 10-AA-0197) – Permitted daily capacity 2,000 tons, daily throughput 1,500 tons.
- Kroeker Recycling Facility (SWIS No. 10-AA-0192) – Permitted daily capacity 7,500 tons, daily throughput 2,500 tons.
- Jefferson Avenue Transfer Station (SWIS No. 10-AA-0171) – Permitted daily capacity 3,500 tons, daily throughput 1,250 tons.
- Rice Road Recyclery & Transfer Station (SWIS No. 10-AA-0145) – Permitted daily capacity 600 tons, daily throughput 400 tons.

The following landfills are within a 50-mile radius of the project site that could be utilized (CalRecycle 2024):

- Waste Management Kettleman Hills Unit B-17, Class II/III Facility (SWIS No. 16-AA-0027) – Permitted through 2030, remaining capacity 17,468,595 CY as of November 19, 2010, daily throughput 2,000 tons.
- Waste Management Kettleman Hills Unit B-18, Class II Facility (SWIS No. 16-AA-0023) – This facility does not accept construction/demolition waste. Remaining capacity 15,600,000 CY as of February 25, 2020, daily throughput 9,000 CY.
- American Avenue Disposal Site, Class II/III Facility (SWIS No. 10-AA-0009) – Permitted through 2031, remaining capacity 29,358,535 CY as of July 29, 2005, daily throughput 2,200 tons.

Regulatory

Federal

Resource Conservation and Recovery Act (RCRA), 40 CFR, Subtitle D. RCRA Subtitle D regulates the disposal of non-hazardous waste. It includes guidelines for the storage and collection of residential, commercial and institutional solid waste (Part 243), and source separation for material recovery (Part 246) design of municipal solid waste facilities (Part 258).

State

Integrated Waste Management Act (PRC Section § 40000). The Integrated Waste Management Act of 1989 established the California Integrated Waste Management Board (CIWMB), revamped the government codes regulating solid waste management, and required cities and counties to reduce the amount of solid waste disposed of in landfills by 50 percent. To comply with the Integrated Waste Management Act, counties must adopt regulations and policies to fulfill the requirements of the Act.

Mandatory Commercial Recycling Law (PRC Section § 42920). Effective May 7, 2012, AB 341 set a statewide goal of reducing solid waste by 75 percent by 2020. It also established mandatory recycling programs for solid waste generated by businesses, public entities, and multi-family dwellings. In addition, the Governor signed SB 1018 on July 27, 2012, which required any business generating over 4 CY of solid waste per week to arrange for recycling services.

Short-Lived Climate Pollutant Reduction Law (PRC Section § 42652). The Short-Lived Climate Pollutant Reduction Law established statewide targets to reduce disposal of organic waste to 50 percent of 2014 levels by 2020 and to 75 percent of 2014 levels by 2025 and instructed the California Department of Resources Recycling and Recovery to adopt regulations to achieve these goals.

California Energy Efficiency Standards for Residential and Nonresidential Buildings – Green Building Code (2011), CCR Title 24 Update (2019). The California Green Buildings Standards Code applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires energy and water-efficient indoor infrastructure. The related waste management plan is required to allow for the diversion of 50 percent of the generated waste away from the landfill.

Local

Fresno County General Plan. The following goals and policies apply to public facilities (Fresno County, 2024b):

- PF-F.1: Reduce the sources of solid waste through reuse, recycling, composting, and environmentally-safe waste transformation.
- PF-F.10: Waste transfer stations are required to be adequately sized, properly zoned, and have direct access to transportation corridors.
- PF-F.11: Resource recovery facilities shall be adequately sized, provide opportunities for steam use for maximum energy efficiency, not sited upwind of urban areas, and have direct access to transportation corridors.
- PF-F.12: Inert waste sites shall be adequately sized, not operate to increase elevation above those of adjacent properties, and not include permanent site improvements.

Fresno County Ordinances

8.20.060, Garbage Removal. The owner or tenant of any premises, business establishment, or industry shall be responsible for the satisfactory removal of all solid waste accumulated on the property or premises.

8.22.030, Illegal Dumping. It is unlawful for any person to cause or permit the illegal dumping of waste matter on the right-of-way of any public highway, street, easement, thoroughfare, or upon any public grounds, or into any stream or dry watercourse, or in any manner not otherwise authorized by the ordinance or State or Federal law.

Cumulative

Appendix A, Table A-1 lists projects under review by the Fresno County Planning Commission, or currently in development. There are 20 actual projects excluding those EIRs associated with a plan, rezoning or variance (FC-1, FC-4, and FC-21). The following solar energy projects appear to be under similar conditions and will be evaluated for solid waste cumulative impacts:

- Heartland Hydrogen Project (FC-9)
- Scarlet Solar (FC-12)
- Sonrisa Solar Project (FC-13)

- Tranquility Solar Project (FC-14)
- Luna Valley Solar (FC-15)
- Westlands Solar Park (WWD-1)

5.12.2 Environmental Impacts

SOLID WASTE MANAGEMENT	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, utilities and service systems.

5.12.2.1 Methodology and Thresholds of Significance

The solid waste facility likely to support the project was evaluated for compliance with State regulations and requirements, as well as assessed to determine if the proposed project would pose an undue burden on landfill capacity.

5.12.2.2 Direct and Indirect Impacts

a. Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction— Less Than Significant with Mitigation Incorporated

Based on the analysis below, construction of the project, with mitigation incorporated, would have a less than significant impact on the capacity of local solid waste infrastructure.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Solid waste consisting of the following materials would be generated during the three-year construction period:

- Concrete (20 tons) – Excess concrete is expected to be generated during project construction.
- Metal (20 tons) – During construction, scrap metal would be generated from the installation of racks, supports and structural components.

- Solar panels (70,000 units) – Heat strengthened glass and galvanized steel from solar panels (First Solar 2024) is a potential waste stream during construction (RCI 2023cc). However, the origin of this waste stream was not discussed. Presumably, the applicant expects a certain amount of breakage or damaged solar panels during construction. This would represent 2 percent of all the solar panels proposed to be installed. According to the application documents, First Solar Series 7 PV panels would likely be used for the project (RCI 2023ff), and each Series 7 PV module weighs 37.9 kilograms (kg), or 87.5 pounds (lbs.) (First Solar 2023). Seventy thousand modules at 87.5 lbs. would result in a weight of 6,125,000 lbs. or 3,663 tons.
- Wood (16,998 tons) – The original application describes wooden construction waste resulting from pallets and other compostable materials such as vegetation, but estimated quantities were not included in the original or revised versions of Table 5.11-1 (RCI 2023cc, RCI 2024k). However, assuming the bulk construction wood debris would result from PV panel shipping crates, the proposed 3,100,000 PV panels proposed for installation, 30 PV panels per crate at 329 lbs. would yield a quantity of 16,998 tons (RCI 2023ff, First Solar 2024).
- Incidental office waste (15 tons) – Paper, plastic and other solid waste would be generated from general administrative activities.

Assuming the maximum anticipated construction schedule of three years (RCI 2023ff), an estimated 20,716 tons of solid waste would be generated during project construction. This solid waste would be diverted from landfills and recycled to the extent possible to comply with AB 341 and the Green Building Code. However, solid waste that cannot be recycled would be disposed of in one of the three Class II/III landfills listed in the Environmental Setting section. According to CalRecycle, the combined remaining capacity of these three landfills is over 62 Million CY (CalRecycle 2024). By converting the estimated tonnage of materials provided in the application, approximately 137,601 CY of solid waste would be generated during project construction (CIWMB 1991, SCDHEC 2015, USEPA 2016). Assuming all the construction-related solid waste could not be recycled, the estimated amount of solid waste generated during project construction would represent 0.2 percent of the available capacity of the three listed landfills.

To ensure recycling of solid waste generated during project construction is recycled to the greatest extent possible, staff proposes a Construction Waste Management Plan as required in Condition of Certification (COC) **WASTE-1**.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades are under the jurisdiction of the California Public Utilities Commission (CPUC). Since the majority of solid waste would be generated during project construction of the solar facility, BESS and O&M facility, incidental construction waste is estimated at less than 10 tons. As with the CEC jurisdictional components of the project, the generation of solid waste would not

exceed the capacity of local facilities and with implementation of mitigation measure **MM WASTE-1**, recycling of solid waste generated during construction would not be in excess of state or local standards.

Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, construction of the project, with mitigation incorporated, would have a less than significant impact on the capacity of local solid waste infrastructure.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During project operations, the following primary waste streams would be generated annually:

- Spent solar panels and components (1,550 panels) – Heat strengthened glass and galvanized steel from solar panels (First Solar 2024) is a potential waste stream during operations as a result of product malfunction (RCI 2023cc). As explained in the Construction section, 1,550 panels at 81 lbs. would result in an annual weight of 125,550 lbs. or 63 tons.
- Spent transformer components (0.14 tons) – The generation of nonhazardous metals, mineral oils, and solids would be expected during project operations.
- Spent switchyard equipment (0.14 tons) – The generation of metals and solids would be expected during project operations.
- Metal (20 tons) – During operations, scrap metal would be generated during the maintenance of structural components.
- General operations waste (156 CY) – Paper, wood, glass, insulation, supplies and plastics would be generated from general operational activities.
- Incidental office waste (21.9 tons) – Paper, plastic and other solid waste would be generated from general administrative activities.

An estimated 109 tons of solid waste would be generated during operation of the facility annually. This solid waste would be diverted from landfills and recycled to the extent possible to comply with AB 341 and the Green Building Code. However, solid waste that cannot be recycled would be disposed of in one of the three Class II/III landfills listed in the Environmental Setting section. According to CalRecycle, the combined remaining capacity of these three landfills is over 62 Million CY (CalRecycle 2024). By converting the estimated tonnage of materials provided in the application, approximately 894 CY of solid waste would be generated during project operations (SCDHEC 2015, USEPA 2016). Assuming all the operational solid waste could not be recycled, the estimated amount of solid waste generated during project operations would represent 0.001 percent of the available capacity of the three listed landfills. The Construction Waste Management Plan proposed by in COC **WASTE-1** would ensure the

recycling of solid waste generated during project construction to the greatest extent possible and not in excess of state or local standards.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades are under the jurisdiction of the CPUC. Since the majority of solid waste would be generated during project operation of the solar facility, BESS and O&M facility, incidental waste generated at the PG&E utility switchyard is estimated at less than 5 tons annually. As with the CEC jurisdictional components of the project, the generation of solid waste would not exceed the capacity of local facilities and with **MM WASTE-1**, recycling of solid waste generated during construction would not be in excess of state or local standards.

b. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction— *No Impact*

Based on the analysis below, construction of the project would comply with federal, state and local solid waste regulations and have no impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) requires local jurisdictions in California to reduce, by 50 percent, the amount of solid waste disposed of in landfills by the year 2000 and beyond. During project construction, solid waste would be collected and hauled off-site for recycling or disposal in local jurisdictions within Fresno County that have programs in place to ensure that disposal of solid waste complies with state requirements. Implementation of COC **WASTE-1** would ensure the recycling of solid waste generated during project construction to the greatest extent possible. The project would not generate any special or unique wastes during the construction phase that would make the project not comply with federal, state, and local statutes or solid waste management and reduction regulations.

Management of hazardous waste along with applicable federal regulations are discussed in **Section 5.9, Hazards, Hazardous Materials, and Wildfire**.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades are under the jurisdiction of the CPUC. As with the CEC jurisdictional components, the project would comply with federal, state, and local statutes and regulations related to solid waste. Implementation of **MM WASTE-1** would ensure the recycling of solid waste generated during project construction to the greatest extent possible. There would be no change in compliance with federal, state, or local statutes and regulations related to solid waste management and reduction.

Operation– *No Impact*

Based on the analysis below, construction of the project would comply with federal, state and local solid waste regulations and have no impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During operation, the project would comply with federal, state, and local statutes and regulations related to solid waste. Implementation of COC **WASTE-1** would ensure the recycling of solid waste generated during project operation to the greatest extent possible. There would be no change in compliance with federal, state, or local statutes and regulations related to solid waste management and reduction.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades are under the jurisdiction of the CPUC. As with the CEC jurisdictional components, the project would comply with federal, state, and local statutes and regulations related to solid waste. Implementation of **MM WASTE-1** would ensure the recycling of solid waste generated during project operation to the greatest extent possible. There would be no change in compliance with federal, state, or local statutes and regulations related to solid waste management and reduction.

5.12.2.3 Cumulative Impacts

Construction and Operation– *Less Than Significant*

Based on the analysis below, construction and operation of the project would have a less than significant impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction

Of the seven solar energy projects evaluated, only the following three projects have information available on Fresno County records (Fresno County 2024a) regarding estimates for solid waste generation during construction:

- Scarlet Solar Project, 4,000 CY over a 6-month construction period.
- Sonrisa Solar Project, 1,200 over a 14-month construction period.
- Luna Valley Solar Project, 1,490 over a 16-month construction period.

The average solid waste generation of these three projects during construction is 2,230 CY. If this average is applied to all seven solar projects, the resulting cumulative solid waste generation is 15,610 CY. This combined with the solid waste generation of the Darden Clean Energy Project (137,601 CY), would result in an overall cumulative solid

waste generation of 153,211 CY. This value would represent 0.2 percent of the available capacity of the three listed landfills (over 62 Million CY).

Therefore, the cumulative impact on local landfill capacity is less than significant.

Operation

The Scarlet Solar project estimates a minimal amount of solid waste generated during project operations, while Sonrisa and Luna Valley solar projects both report an estimated 52 CY generated annually. If the seven solar energy projects are assumed to produce 52 CY of solid waste annually as the Sonrisa and Luna Valley solar projects, the resulting cumulative generation of solid waste would be 364 CY. This combined with the annual generation of solid waste generation for the Darden Clean Energy Project (894 CY), would result in an overall annual operational cumulative solid waste generation of 1,258 CY. This would represent 0.002 percent of the available capacity of the three listed landfills (over 62 Million CY).

Therefore, the cumulative impact on local landfill capacity is minimal.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades are under the jurisdiction of the CPUC. Solid waste accumulated on the CPUC-jurisdictional project components would be included in the waste streams described in the CEC-jurisdictional components.

5.12.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.12-1 below details staff's determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.12-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis For Determination
Federal	
Resource Conservation and Recovery Act (RCRA)	
40 CFR, Subtitle D. Provides guidelines for the storage and collection of residential, commercial, and institutional solid waste (Part 243), source separation for material recovery (Part 246), and design of municipal solid waste facilities (Part 258).	Yes. All landfills proposed for use with the project would comply with Federal regulations.
State	
Integrated Waste Management Act (Assembly Bill 939)	

TABLE 5.12-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
AB 939/Public Resources Code Section § 40000. Established the California Integrated Waste Management Board (CIWMB), revamped the government codes regulating solid waste management, and required cities and counties to reduce the amount of solid waste disposed of in landfills by 50 percent.	Yes. All landfills proposed for use with the project would comply with State statutes.
California Assembly Bill 341 (Reduction of Solid Waste)	
AB 341/Public Resources Code Section 42926(a). Set a statewide goal of reducing solid waste by 75 percent by 2020. It also established mandatory recycling programs for solid waste.	Yes. All landfills proposed for use with the project would comply with State statutes. COC WASTE-1 would assist with the solid waste reduction requirement of the statute.
California Senate Bill 1383 (Reduction of Organic Waste)	
SB 1383/CCR Title 14 Section § 17402. Established statewide targets to reduce 2014 organic waste levels to 50 percent by 2020 and to 75 percent by 2025.	Yes. All landfills proposed for use with the project would comply with State regulations.
Local	
Fresno County Ordinance	
8.20.060 This ordinance states that the property owner is responsible for the satisfactory removal of all solid waste accumulated on the property or premises. 8.22.030 This ordinance prohibits illegal dumping.	Yes. All landfills proposed for use with the project would comply with local ordinances.

5.12.4 Conclusions and Recommendations

Staff recommends adopting the conditions of certification as detailed in subsection "5.12.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

As discussed above, with implementation of the proposed conditions of certification and mitigation measures, the project would have a less than significant impact related to solid waste management and would conform with applicable LORS.

Additional impacts associated with non-jurisdictional project components outside of CECs jurisdiction, such as the PG&E Utility Switchyard and PG&E Downstream Network Upgrades to be permitted by CPUC, which will be considered for permitting by CPUC, would require mitigation. Staff recommends the mitigation measures as detailed in subsection "5.12.6 Recommended Mitigation Measures" below.

5.12.5 Proposed Conditions of Certification

The following proposed Conditions of Certification include measures to ensure conformance with applicable LORS.

WASTE-1 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the Compliance Project Manager (CPM) for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM.

The Operation Waste Management Plan shall be submitted to the CPM no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

5.12.6 Recommended Mitigation Measures for Non-jurisdictional Project Components

For the non-jurisdictional components of the project, the following mitigation measures actions can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). The measures are necessary to maintain consistency with respect to non-hazardous waste management.

MM WASTE-1 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPUC for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

5.12.7 References

- CalRecycle 2024 – California Department of Resources Recycling and Recovery (CalRecycle). SWIS Facility/Site Search website. Accessed on November 20, 2024. Available online at: <https://www2.calrecycle.ca.gov/SolidWaste/Site/Search>
- CIWMB 1991 – California Integrated Waste Management Board (CIWMB). Final Report, Conversion Factors for Individual Material Types. Prepared by CalRecovery Incorporated. December 1991. Accessed on February 3, 2025. Available online at: <https://p2infohouse.org/ref/48/47051.pdf>
- First Solar 2023 – First Solar, Inc. (First Solar). Series 7 TR1 505-540 Watt Thin Film Solar Module, U.S. Module Datasheet. Copyright 2023. Accessed on November 21, 2024. Available online at: <https://www.firstsolar.com/-/media/First-Solar/Technical-Documents/Series-7/Series-7-TR1-Datasheet.ashx>
- First Solar 2024 – First Solar, Inc. (First Solar). First Solar Series 7 TR1 Module, User Guide, MPD-00752-07-US. September 3, 2024. Accessed on February 3, 2025. Available online at: <https://www.firstsolar.com/-/media/First-Solar/Technical-Documents/User-Guides/Series-7-TR1-User-Guide.ashx?la=en>
- Fresno County 2016 – Fresno County Department of Public Works and Planning Division (Fresno County). Planning Commission Staff Report Agenda Item No. 2, August 25, 2016. Available online at: <https://www.fresnocountyca.gov/files/shared/assets/county/v/1/vision-files/files/64409-cup3524-sr.pdf>
- Fresno County 2024a – Fresno County Planning and Land Use Division (Fresno County). Environmental Impact Reports. Accessed on November 27, 2024. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports>
- Fresno County 2024b – Fresno County Planning and Land Use Division (Fresno County). Fresno County General Plan Policy Document, Comprehensive General Plan Review and Revision. Final February 2024. Accessed on November 20, 2024. Available online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- Fresno County 2024c – County of Fresno (Fresno County). County of Fresno – GIS Portal - Zoning Unincorporated. Accessed on November 19, 2024. Available online at: <https://gisportal.co.fresno.ca.us/portal/apps/webappviewer/index.html?id=b921843d343d4df998b5b3c6a301756a>
- RCI 2023cc – Rincon Consultants, Inc. (TN 252982). Section 5-11 Waste Management. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024k – Rincon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2, dated March 15, 2024. Available online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- SCDHEC 2015 – South Carolina Department of Health and Environmental Control (SCDHEC). Volume-To-Weight Conversion Factors table. Prepared May 5, 2015. Accessed on November 6, 2023. Available online at: https://dc.statelibrary.sc.gov/bitstream/handle/10827/18367/DHEC_Volume_to_Weight_2015-03.pdf?sequence=1&isAllowed=y
- USEPA 2016 – United States Environmental Protection Agency (USEPA). Volume-To-Weight Conversion Factors, U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery, April 2016. Accessed on November 27, 2023. Available online at: https://www.epa.gov/sites/default/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf

5.13 Transmission Line Safety and Nuisance

5.13.1 Environmental Setting

The project is proposed on approximately 9,500 acres in an agricultural area of western Fresno County (IP 2024n). Transmission lines in the project area include the Los Banos-Gates No. 1. Los Banos-Midway No. 2 500 kV Transmission Lines, which cross the project site immediately west of the proposed PG&E utility switchyard. The current transmission line corridor comprises two 500 kV single circuits parallel to each other and mounted on two distinct rows of transmission towers. The existing two circuits near the project site are spaced approximately 1,200 to 1,600 feet apart and have towers ranging from approximately 100 to 160 feet tall.

Regulatory

The following section's national, federal, state, and local laws and policies apply to controlling electric power lines' field and non-field impacts. Staff's analysis examines the project's compliance with these requirements. Different versions of the National Electrical Code (NEC) are enforced throughout the United States because the Code does not fall under federal law. Instead, it is a "uniform code," a set of guidelines that each state may adopt and apply as it sees fit.

National

Institute of Electrical and Electronics Engineers (IEEE). IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities.

American National Standards Institute (ANSI). ANSI is a private, non-profit organization that administers and coordinates the U.S. voluntary standards and conformity assessment system.

National Electrical Safety Code (NESC). NESC is a United States standard for the safe installation, operation, and maintenance of electric power and communication utility systems, including power substations, overhead power lines, and underground power and communication lines.

Federal

Code of Federal Regulations (CFR)

Title 47, CFR, section 15.205, Federal Communications Commission (FCC). Prohibits operation of devices that can interfere with radio- frequency communication.

Title 14, Part 77 of the Code of Federal Regulations (CFR), "Objects Affecting the Navigable Air Space FAA Advisory Circular No. 70/7460-1L (2015), "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space."

FAA Advisory Circular 70/7460-1L, "Obstruction Marking and Lighting"

State

California Public Utilities Commission (CPUC)

General Order 52. Governs the construction and operation of power and communications lines to prevent or mitigate interference.

General Order-131-D," Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California". Specifies application and notices requirements for new line construction, including EMF reduction.

General Order 95, "Rules for Overhead Electric Line Construction". Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.

General Order 128, "Rules for underground electric supply and communication systems construction". The order formulates uniform requirements for underground electric supply and communication line construction in California.

California Code of Regulations (CCR)

Title 8, CCR, Section 2700 et seq., "High Voltage Safety Orders". Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.

Title 14, CCR, Sections 1250-1258, "Fire Prevention Standards for Electric Utilities". Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.

Cumulative

There are no power-generating cumulative projects listed in **Appendix A, Table A-1** that when combined with the DCEP would result in significant environmental impacts due to physical or electrical effects associated with transmission lines.

5.13.2 Environmental Impacts

TRANSMISSION LINE SAFETY AND NUISANCE				
To what extent does the project's transmission line physically or electrically satisfy the following criteria? (Via its electromagnetic field):	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Affect aviation safety?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Interfere with radio frequency communication?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be a source of audible noise?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be a fire hazard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Be a source of hazardous shock?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Be a source of nuisance shock?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Affect public health?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 20, Div. 2, Ch. 5, Powerplant and Transmission Line Jurisdictional Investigations, Appendix B, Transmission System Safety and Nuisance

Project and Transmission System Components

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Solar Facility

The project would include a 1,150 MW solar photovoltaic (PV) facility. The panels would be electrically connected into panel strings using wiring secured to the panel racking system. Underground cables would be installed to convey the DC electricity from the panels via combiner boxes or combiner harnesses with a trunk bus system throughout the PV arrays to inverters that would convert the direct current to alternating current electricity. The output voltage of the inverters would be stepped up to the required collection system voltage at the medium voltage pad mount transformer located near the inverter. The 34.5 kV level collection cables would be buried underground in a trench approximately 4 feet deep, with segments installed overhead on wood poles to connect all of the solar facility development areas to the on-site step-up substation, which may or may not involve an overhead or underground road crossing.

Battery Energy Storage System

The project would include a battery storage system capable of storing up to 1,150 megawatts (MW) of electricity for 4 hours (4,600 MW-hours), requiring up to 35 acres of land. As shown in the project description, figure 2-2, the battery system would be located near the project substation to facilitate interconnection and metering. The BESS would also include a battery management system to control the charging/discharging of the batteries. The project would use commercially available battery technology such as lithium ions, lithium iron phosphate, nickel manganese cobalt, and nickel cobalt aluminum batteries.

Step-Up Substation

All collector feeder circuit voltages step up from 34.5 kV to 500 kV by the main transformers of the project's substation. The substation consists of eight power and auxiliary transformers, nine 500 kV breakers, bus bars, low voltage switchgear, disconnect switches, capacitor banks, a grounding grid, microwave towers, dead-end structures up to 100 feet in height, chain link fence and other protection devices. All project substation structures are grounded, as shown in the project description, Appendix E. A communication system also would be installed within the same footprint. The communication system comprises fiber optic communication cabling for the Supervisory Control and Data Acquisition (SCADA), which provides communication capabilities between substations, switchyard, and O&M facilities.

Generation-Intertie Line

The 15 miles-long, 500 kV single-circuit gen-tie would be constructed with bundled 2x1590 Lapwing conductors with an approximate ampacity of 2,700. The gen-tie line would be built with either monopole tubular steel poles or steel H-frame structures. Gen tie structures would be 120 feet tall, with a maximum height of 200 feet. The project would utilize approximately 80 monopole or H-frame structures; the corridor of the gen-tie line is approximately 275 feet wide. All the gen-tie line structures are grounded, as shown in Appendix E. The gen-tie line would facilitate interconnecting the step-up substation with the new PG&E switchyard.

PG&E Utility Switchyard and Downstream Network Upgrades

PG&E Utility Switchyard

The utility switchyard includes two-bay, five high-voltage circuit breakers, disconnect switches, series capacitor banks, grounding grids, protection devices, bus support structures, Direct Transfer Trip (DTT) receivers, chain link fence around the switchyard. The switchyard would be designed and constructed with a Breaker-and-a-half (BAAH) configuration. The application stated that the Los Banos-Midway 500 kV transmission line would loop in and out through the newly built switchyard and interconnect the project with the PG&E grid. However, a California ISO study indicated that the Manning-Midway 500 kV line would loop in and out of the PG&E switchyard. Interconnection would be supported by approximately 18 Tubular Steel Pole, Light-Duty Steel Pole, or Lattice Steel Tower structures. Interconnection would be supported by approximately 18 Tubular Steel Pole, Light-Duty Steel Pole, or Lattice Steel Tower structures. To construct a loop-in and loop-out connection with the PG&E new switching station, PG&E would remove two existing lattice steel towers and inter-set approximately six new structures along the Manning-Midway 500 kV line. The following interconnection would occur after installing the 500 kV Manning substation. The tallest structures at the switchyard would be the dead-end structures, which would be up to 175 feet above ground level and terminate the 500 kV gen-tie and utility 500 kV loop-in and out lines. All the switchyard structures are grounded, as shown in Appendix E. The switchyard would be constructed by the applicant and transferred to PG&E for operation

and maintenance purposes. (See **Section 3, Project Description, Figure 3-2**) (RCI 2024k, Figure 2-2,2-3a through 2-3h, Appendix D and E, IP 2024a, Attachment 10).

PG&E Downstream Network Upgrades

The project would require multiple downstream upgrades to the Los Banos, Midway, Gates, and Manning substations that have been identified in the California Independent System Operator (California ISO) phase II cluster study. The identified substation upgrades reflect changes to accommodate multiple proposed projects in the region and some of the identified upgrades would happen regardless of whether Darden is approved or built. Upgrades identified at the Manning substation are due to the LS Power project, subject to a separate CPUC proceeding. **Section 4.3, Transmission System Engineering** details the reliability and deliverability assessment results, mitigation measures and detail downstream transmission system upgrades.

The project-related downstream upgrades are necessary for project interconnection. Additionally, several breakers and other equipment would need to be upgraded in the abovementioned substations.

5.13.2.1 Methodology and Thresholds of Significance

The LORS and practices listed in **Table 5.13.1** have been established to maintain impacts below levels of potential environmental significance. Thus, if staff determines that the project would comply with applicable LORS, we will conclude that any transmission line-related safety and nuisance impacts would be less than significant. The nature of these individual impacts is discussed below together with the potential for compliance with the LORS that apply.

5.13.2.2 Direct and Indirect Impacts

a. Would the project's transmission line physically or electrically (via its electromagnetic field) affect aviation safety?

Construction— *Less Than Significant Impact*

Based on the analysis below, the project's transmission lines' construction related physical and electrical impacts on aviation safety would result in a less than significant impact through the implementation of CPUC standards.

Operation— *Less Than Significant Impact with Mitigation Incorporated*

Based on the analysis below, the project's transmission lines' physical and electrical impacts on aviation safety would be reduced to less than significant with the incorporation of Conditions of Certification (COCs) and mitigation measures (MMs).

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Federal Aviation Administration (FAA) notification is required in structures over 200 feet above ground level or if the structure is less than 200 feet in height but located within the restricted airspace in the approaches to public or military airports and heliports. Moreover, for airports with runways longer than 3,200 feet, the FAA defines the confined space as an area extending 20,000 feet (3.3 nautical miles) from the runway. For airports with runways of 3,200 feet or less, the restricted airspace is defined as a space that extends 10,000 feet from the runway. For heliports, the restricted space is an area of space that extends 5,000 feet (0.8 nautical miles) from the landing site.

CEC staff has assessed the potential for an aviation hazard regarding the height of the proposed project transmission lines. The project overhead gen-tie structures and radio tower of the substation would reach a maximum height of 200 feet, equivalent to the 200-foot height of concern to the FAA. Therefore, gen-tie and radio tower structures would have flashing red lights installed to enhance aviation visibility and comply with FAA standards and Advisory Circular 70/7460-1L (FAA 2016). COC **TLSN-5** requires the applicant to construct the transmission facilities consistent with CPUC and PG&E construction standards, such as G.O 95, 128 and 131-D. Additionally, the applicant is required to get approval from the FAA if the transmission structures reach a height of 200 feet or above. This would include preparing a lighting plan for the project and obtaining FAA approval that would specify the installation of flashing red lights on designated gen-tie structures to improve visibility for aviation. The nearest municipal airport (Mendota Municipal Airport) is 22 miles from the project's site. Therefore, staff concludes that with incorporation of COC **TLSN-5**, the transmission lines would not pose a collision risk to aviation or aircraft. (IP 2024n, section 2.2.2, page 2-26)

PG&E Utility Switchyard and Downstream Network Upgrades

Construction and operation of the utility switchyard, loop in and loop out line, and downstream network upgrades to transmission facilities would be required to satisfy CPUC and PG&E construction standards such as G.O 95, 128 and 131-D. Additionally, PG&E should get approval from the FAA if the transmission structures reach a height of 200 feet or above and must consider installing flashing lights as recommended in **MM TLSN-1**. Therefore, with adherence to these construction standards, the transmission line would not physically or electrically affect aviation safety.

b. Would the project's physical or electrical transmission line (via its electromagnetic field) interfere with radio-frequency communication?

Construction— No Impact

The project's transmission lines would have no impact on radiofrequency during construction as the lines would not be electrically charged.

Operation— *Less than Significant Impact*

Based on the analysis below, the impacts on radiofrequency would be less than significant as the transmission lines are not proposed near inhabited areas.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Transmission line-related radio-frequency interference is one of the indirect effects of line operation. It is produced by the physical interactions of line electric fields. More specifically, such interference is due to radio noise made by the action of the electric fields on the surface of the energized conductor. The process involved is known as *corona discharge* but is referred to as *spark gap electric discharge* when it occurs within gaps between the conductor and insulators or metal fittings. Corona from a transmission line may result in radio and television reception interference, audible noise, light, and ozone production. When generated, such noise manifests as perceivable interference with radio or television signal reception or other radio communication.

Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, antenna orientation, signal level, line configuration, and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The level of any such interference usually depends on the magnitude of the electric fields involved and the distance from the line. Therefore, the potential for such impacts would be minimized by reducing the line's electric fields and by locating the line away from inhabited areas.

The DCEP transmission lines would be built and maintained according to standard practices that minimize surface irregularities and discontinuities. It is unlikely that the project transmission line would have any effect on radio or television reception due to unbuilt bare land around the transmission interconnection. Staff does not expect any corona-related radio-frequency interference or complaints and does not recommend any related condition of certification.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction and operation of the PG&E utility switchyard, looping in and out line, and downstream network upgrades to transmission facilities would be required to be constructed to satisfy CPUC and PG&E standards such as G.O 95,128,131-D and NESC. Due to the unbuilt bare land around the downstream transmission facilities, which are being built with the proper right-of-way, PG&E downstream facilities are unlikely to affect radio or television reception. G.O 95 provides the clearance requirement for high voltage lines and minimize the EMF effects. Staff does not expect any corona-related radio-frequency interference or complaints due to PG&E utility switchyard and downstream network upgrades and does not recommend any related mitigation.

c. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a source of audible noise?

Construction— *No Impact*

The project's transmission lines would not be a source of audible noise while be constructed as the lines would not be electrically charged.

Operation— *Less Than Significant Impact*

Based on the analysis below, the physical or electronic effects from operation of the project's transmission lines would not significantly increase current background noise levels. Therefore, impacts associated with audible noise from the project's transmission lines would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Audible noise usually results from the action of the electric field at the surface of the line conductor. It could be perceived as a crackling, frying, or hissing sound or hum, especially in wet weather. Since the noise level depends on the strength of the line's electric field, the potential for perception would be assessed by estimating the field strengths during operation. The electric field increases when the line voltage increases. Research by the Electric Power Research Institute (EPRI 1982) has validated this by showing that the fair-weather audible noise from modern transmission lines is generally indistinguishable from background noise at the edge of a right-of-way of 100 feet or more. A more detailed discussion of the proximity of potentially sensitive receptors is found in **Section 5.9, Noise and Vibration**. The proposed line right-of-way would fall mainly within the DCEP boundary and PG&E service area. Therefore, staff does not expect the proposed line operation to add to the project area's current background noise levels. Also, the audibles noise level depends on online voltage and not on a conductor's power flow level. Because line voltage remains nearly constant for a transmission line during regular operation, the audible noise associated with the 500 kV lines in the area would be of the same magnitude before and after the project (IP 2024n, Section 4.2.3.1 to 4.2.3.2, RCI 2024k, Figures 2a to 2h).

Federal or state regulations do not specifically mandate noise-reducing designs related to electric field intensity in terms of specific noise limits. Instead, such audible noise is limited through design, construction, or maintenance practices established from industry research and experience as effective without impacts on online safety, efficiency, maintainability, and reliability. Since these designs are also aimed at minimizing field strengths, staff does not expect the proposed line operation to add significantly to current background noise levels in the project area. Please refer to the staff's analysis in **Section 5.9, Noise and Vibration** section, for an assessment of the proposed project's noise.

PG&E Utility Switchyard and Downstream Network Upgrades

Operation of the PG&E switchyard, looping in and out line, and PG&E downstream network upgrades to transmission facilities would be required to be constructed to satisfy CPUC and PG&E construction and design standards, such as G.O 95,128,131-D and NESC. Due to the unbuilt bare land around the downstream transmission facilities and these transmission facilities being built with the proper right-of-way, the PG&E downstream facilities are unlikely to affect audible noise. Staff does not recommend any related mitigation.

d. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a fire hazard?

Construction— No Impact

The project's transmission lines would not be a source of fire hazard while be constructed as the lines would not be electrically charged.

Operation— Less Than Significant with Mitigation Incorporated

Based on the analysis below, operation of the project's transmission line would not be a fire hazard with incorporation of COCs. Therefore, impacts would be less than significant with mitigation incorporated.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

The fire hazards addressed in **Table 5.13-1** are those caused by sparks from overhead line conductors, or that could result from direct contact between a line and nearby trees and other combustible objects.

The applicant would comply with Title 14, California Code of Regulations, Section 1250, Article 4, establishing fire prevention standards for electric power generation facilities. Also, CPUC GO-95 establishes rules and guidelines for transmission line construction, including clearances from other manmade and natural structures and tree-trimming requirements to mitigate fire hazards. Therefore, the applicant's intention to ensure compliance with the clearance-related aspects of GO-95 would be an essential part of this mitigation approach. Staff concludes that COCs **TLSN-1** and **TLSN-2** should be implemented as mitigation measures.

PG&E Utility Switchyard and Downstream Network Upgrades

Operation of the PG&E switchyard, looping in and out line, and PG&E downstream network upgrades to transmission facilities would be required to be constructed according to CPUC PG&E and NESC construction and design standards, such as G.O 95,128,131-D. The PG&E would comply with Title 14, California Code of Regulations, Section 1250, Article 4, establishing fire prevention standards for electric power generation facilities. Also, CPUC GO-95 establishes rules and guidelines for transmission line construction, including clearances from other manmade and natural structures and

tree-trimming requirements to mitigate fire hazards. Therefore, staff recommends **MM TLSN-1** to implement these mitigation measures.

e. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a source of hazardous shock?

Construction— *No Impact*

The project's transmission lines would not be a source of hazardous shock while be constructed as the lines would not be electrically charged.

Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, operation of the project's transmission line would not be a source of hazardous shock, with the incorporation of COCs and MMs.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Hazardous shocks could result from direct or indirect contact between an individual and the energized line, whether overhead or underground. Such shocks can cause severe physiological harm or death. Hazardous shocks remain a driving force in the design and operation of transmission and other high-voltage lines.

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry from compliance with the requirements specifying the minimum national safe operating clearances applicable in areas where the line might be accessible to the public.

Potentially hazardous shocks could result from electrical faults from the new DCEP equipment or the PG&E high-voltage transmission system. The existing PG&E 500-kV transmission system is located within a secured area under PG&E's access control. The New PG&E switchyard is fenced to keep individuals from entering the area where they could be exposed to associated hazardous shocks. The new DCEP's 500 kV generation tie lines would be designed by applicable LORS. Implementing the GO-95-related measures against direct contact with the energized line would minimize the risk of hazardous shocks. Because the lines would be constructed in conformance with the requirements of CPUC GO-95 and Title 8 California Code of Regulations (CCR) 2700, hazardous shocks are highly unlikely to occur because of the project's construction and operation. Staff's recommended COCs **TLSN-1** and **TLSN-3** would be adequate to ensure the implementation of the necessary mitigation measures. (IP 2024n, sections 2.0, Figures 2a to 2h)

PG&E Switchyard and Downstream Network Upgrades

Operation of the PG&E switchyard, looping in and out line, and PG&E downstream network upgrades to transmission facilities would be required to be constructed to satisfy CPUC, PG&E, and NESC construction and design standards, such as G.O

95,128,131-D. The PG&E downstream facilities will be designed, constructed, and operated according to the standards and applicable LORS. Implementing the GO-95-related measures in constructing transmission facilities, including proper grounding methods, transmission line clearance with the ground, right-of-way requirements, and the IEEE Guide for Fence Safety Clearances in Electric-Supply Stations against direct contact with the energized line and substation components, would minimize the risk of hazardous shocks. Because the lines would be constructed in conformance with the requirements of CPUC GO-95 and Title 8 California Code of Regulations (CCR) 2700, hazardous shocks are highly unlikely to occur.

f. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a source of nuisance shock?

Construction— *No Impact*

The project's transmission lines would not be a source of nuisance shock while be constructed as the lines would not be electrically charged.

Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, operation of the project's transmission line would not be a source of nuisance shock, with the incorporation of COCs and MMs.

Solar Facility, Battery Energy Storage System, Step-Up Substation, and Generation-Intertie

Nuisance shocks are caused by current flow at levels generally incapable of causing physiological harm. They result primarily from direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line's electric and magnetic fields.

No design-specific federal or state regulations limit nuisance shocks in the transmission line environment. For modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). Standard industry grounding practices would minimize the potential for nuisance shocks around the proposed line.

For the proposed transmission line, the project owner would be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way. Staff proposes COC **TLSN-3** to provide grounding for the DCEP project. (RCI 2023bb, section 4.2.3.1 and 4.2.3.2)

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E switchyard, looping in and out line, and PG&E downstream network upgrades to transmission facilities would be required to be constructed to satisfy CPUC, PG&E, and NESC construction and design standards, such as G.O 95,128,131-D. The PG&E

downstream facilities will be designed, constructed, and operated according to the standards and applicable LORS. PG&E would utilize proper grounding methods and conduct soil resistivity tests to minimize the potential nuisance shocks.

g. Would the project's transmission line either physically or electrically (via its electromagnetic field) affect public health?

Construction— *No Impact*

The project's transmission lines would not impact public health while be constructed as the lines would not be electrically charged.

Operation— *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, operation of the project's transmission line would not have a significant impact on public health.

Electric and magnetic fields are created whenever electricity flows; exposure to them is generally called electric and magnetic field (EMF) exposure. There is public concern regarding the possibility of health effects from EMF exposure. The electrical transmission interconnection and other electrical devices constructed as part of the project emit EMF when in operation. These fields are typically measured near ground level, where people encounter them. To the extent they occur, EMF fields could impact receptors on the properties adjacent to the project site

As previously stated, the project electrical transmission interconnection and other electrical devices would be located mainly within the DCEP project site and PG&E's transmission system. There are no receptors adjacent to the Project site. Site access is restricted to station workers, incidental construction and maintenance personnel, other company personnel, regulatory inspectors, and approved guests. Because access would not be available to the public, public exposure to EMF is not expected from DCEP or the transmission facilities to be constructed as part of the project (RCI 2023bb, sections 4.2.3.1 and 4.2.3.2).

Industries and Applicant's Approach to Reducing EMF Exposures

The present focus of EMF exposure concerns the magnetic field. Unlike electric fields, magnetic fields penetrate the soil, buildings, and other materials, producing human exposures that cause health concerns. The industry seeks to reduce exposure not by setting specific exposure limits but through design guidelines that minimize exposure in each case.

In comparison to the strong magnetic fields from the more visible high-voltage power lines, CEC staff considers it essential, for perspective, to note that an individual in a home could be exposed to much stronger fields from high-voltage lines while using some common household appliances (National Institute of Environmental Health Sciences 1998). The difference between these field exposures is that the higher-level, appliance-related exposures have a short-term duration. In contrast, the exposures

from power lines have a lower level but a long-term duration. Scientists have not established which exposure types would be more biologically meaningful in the individual. CEC staff notes such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than around high-voltage power lines.

As with DCEP project lines, specific field strength-reducing measures would be incorporated into the proposed line design to ensure the field strength minimization currently required by the CPUC, given the concern over EMF exposure and health.

The field reduction measures that could be applied include the following:

1. increasing the distance between the conductors and the ground to an optimal level.
2. reducing the spacing between the conductors to an optimal level.
3. minimizing the current in the line; and
4. Arrange the current flow to maximize the cancellation effects from the interaction of conductor fields.

Long-term residential field exposures would not be a significant concern since the route of the proposed project's transmission line avoids residences. The field strengths of most significance would be encountered within the boundaries of the proposed DCEP and a PG&E-controlled area. These field intensities would depend on the effectiveness of the applied field-reducing measures. The requirements in COC **TLSN-4** for field strength measurements are intended to assess the applicant's assumed field reduction efficiency. The actual contribution to the area's field exposure levels would be documented for the proposed route from the results of the field strength measurements required in **TLSN-4**, for field strength measurements are intended to assess the applicant's assumed field reduction efficiency.

PG&E Switchyard, and Downstream Network Upgrades

The PG&E switchyard, looping in and out line, and PG&E downstream network upgrades to transmission facilities would be required to be constructed to satisfy CPUC, PG&E, and NESC construction and design standards, such as G.O 95,128,131-D. The PG&E downstream facilities will be designed, built, and operated according to the standards and applicable LORS. Site access is restricted to station workers, incidental construction and maintenance personnel, other company personnel, regulatory inspectors, and approved guests. Because access would not be available to the public, public exposure to EMF is not expected from downstream transmission facilities to be constructed as part of the project.

5.13.2.3 Cumulative Impacts

Construction and Operation— *No Impact*

Cumulative impacts of Transmission Line Safety and Nuisance would be considered if other power-generating facilities were adjacent to DCEP. Since there are no other power-generating facilities adjacent to DCEP and not sharing the same gen-tie line, there would be no adverse cumulative impacts due to DCEP combined with other projects.

5.13.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.13-1 below details the staff's determination of conformance with applicable local, state, and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, the staff concludes that with the implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, "5.13.5 Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.13-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52). Governs the construction and operation of power and communications lines to prevent or mitigate interference.	Yes. The applicant would not construct or operate transmission or communication lines to prevent or mitigate inductive interference. Applicable COC TLSN-1, TLSN-2 and TLSN-3
California Public Utilities Commission (CPUC) General Order (GO-95 and GO-128), "Rules for Overhead and Underground Electric Line Construction". Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.	Yes. To satisfy the G.O. 95 requirement, the applicant would construct Gen-tie line structures with a height of less than 120 feet. All gen-tie structures, substation components, and the switchyard would be constructed according to the G.O. 95 and 128 electrical grounding standards. The project's underground circuits would utilize the duct banks to minimize the EMF effects, thus satisfying the G.O.128 standards. The applicant would utilize the lighting and surge arresters in the substations and switchyard as necessary, dissipating the fault currents and voltages caused by lightning and voltage surges. Applicable COC TLSN-1, TLSN-3 and TLSN-5
Title 8, California Code of Regulations (CCR) section 2700 et seq. "High Voltage Safety	Yes. Gen-tie structures, circuits overhead/underground, substations, and

TABLE 5.13-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Orders". Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.	switchyard components would be constructed according to "High Voltage Safety Orders." Applicable COC TLSN-1, TLSN-3 and TLSN-4
National Electrical Safety Code (NESC). Specifies grounding procedures to limit nuisance shocks. It also specifies minimum conductor ground clearances.	Yes. All Gen-tie structures, substation components, and the switchyard would be constructed according to the NESC standards and G.O. 95 and 128 grounding standards. Overhead and underground grounding circuits will be designed with proper conductor sizes to dissipate the fault current. The applicant will select proper conductor sizes to satisfy the NESC standards. All the substation or switchyard components would be grounded using the underground grounding grid. The applicant will assess the soil resistivity test for the project's substation, switchyard sites, and transmission line path. Applicable COC TLSN-1 and TLSN-4
GO-131-D, CPUC" Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California." Specifies application and notices requirements for new line construction, including EMF reduction.	Yes. The project would be built with proper transmission line clearance with the ground and satisfy G.O.95 Transmission paths Right-of-way requirements. Underground circuits would utilize duct banks to minimize the EMF and de-rated ampacity of conductors. Applicable COC TLSN-1, TLSN-3 and TLSN-4
CPUC Decision D.93-11-013. Specifies CPUC requirements for reducing electric and magnetic fields.	Yes. The CPUC Commission required the utilities to undertake no-cost EMF mitigation measures and implement low-cost mitigation measures to the extent approved as part of a project's certification process. "Low-cost" was defined as being within 4% of the total project cost, but the Commission specified that this 4% benchmark is not an absolute cap. Applicable COC TLSN-4
CPUC Decision D.06-01-042. Re-affirms CPUC EMF Policy in D.93-11-013.	Yes. Re-affirms the above requirement. Applicable COC TLSN-4
Title 14, Cal. Code Regs., sections 1250-1258, "Fire Prevention Standards for Electric Utilities." Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.	Yes. The applicant should refer to the Fire Prevention Standards under 1250-1258. (design, construction, and operation phases). Applicable COC TLSN-1, TLSN-2 and TLSN-3
Standards	

TABLE 5.13-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Institute of Electrical and Electronics Engineers (IEEE) 1119, "IEEE Guide for Fence Safety Clearances in Electric-Supply Stations". Specifies the guidelines for grounding-related practices within the ROW and substations.	<p>Yes. A fence around the substation or switchyard and proper Transmission line clearance would facilitate a safety clearance zone.</p> <p>All the substation, switchyard, and fence components would be grounded using the underground grounding grid.</p> <p>Maintain the proper ROW of the transmission paths and substations to minimize the flashover and EMF effects.</p> <p>Applicable COC TLSN-1 and TLSN-3</p>
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measuring Power Frequency Electric and Magnetic Fields from AC Power Lines. Specifies standard procedures for measuring electric power frequency and magnetic fields from an operating electric line.	<p>Yes. The applicant would conduct the following tests.</p> <p>The first test is a corona performance test. It uses visible techniques to determine the onset of a positive corona.</p> <p>The second test is radio interference voltage (RIV). To minimize the flashover and EMF effects, the RIV voltage must be measured according to ANSI C63.2 or CISPR 16-1-1 and CISPR TR 18-2.</p> <p>Applicable COC TLSN-4</p>

5.13.4 Conclusions and Recommendations

As discussed above, with the implementation of conditions of certification, the project would have a less-than-significant impact related to transmission line safety and nuisance and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.13.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Impacts associated with non-jurisdictional project components require mitigation to reduce impacts to less than significant. Staff recommends the mitigation measures detailed in subsection "5.13.6 Recommended Mitigation Measures for Non jurisdictional Project Components" below. The mitigation measures recommended below can and should be adopted by the CPUC as mitigation measures.

5.13.5 Proposed Conditions of Certification

TLSN-1 The project owner shall construct the proposed 230-kV transmission lines according to the requirements of California PUC's GO- 95, GO-52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and PG&E's EMF reduction guidelines.

Verification: At least 30 days before starting construction of the transmission lines or related structures and facilities, the project owner shall submit to the compliance project manager (CPM) a letter signed by a California-registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall ensure that the route of the proposed transmission lines is kept free of combustible material, as required under the provisions of GO-95 and section 1250 of Title 14 of the California Code of Regulations.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results, and any fire prevention activities carried out along the proposed route and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.

TLSN-3 The project owner shall ensure that all permanent metallic objects within the proposed route are grounded according to industry standards.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

TLSN-4 The project owner shall measure the line EMF's maximum strengths at the ROW's edge to validate the applicant's estimates for these fields. These measurements shall be made (a) according to the standard procedures of the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) and (b) before and after energizing. The measurements shall be completed no later than six months after the start of operations.

Verification: The project owner shall file copies of the pre- and post-energizing measurements with the CPM within 60 days after the measurements are completed.

TLSN-5 Gen-Tie line and other transmission related structures: Transmission facilities are constructed to satisfy CPUC and PG&E construction standards such as G.O 95,128 and 131-D. Additionally, PG&E should get approval from the FAA if the transmission structures reach a height of 200 feet or above.

Verification: At least 30 days before the construction of structures above 200 feet tall, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

5.13.6 Recommended Mitigation Measures for Non jurisdictional Project Components

For the Non jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2).

MM TLSN-1 PG&E Switchyard and Downstream Network Upgrades belong to non-jurisdictional components: Downstream Transmission facilities are constructed to satisfy CPUC and PG&E construction standards such as G.O 95,128 and 131-D. Additionally, PG&E should get approval from the FAA if the downstream transmission structures reach a height of 200 feet or above.

5.13.7 References

- CPUC 2020 – California Public Utilities Commission. General Order 95 (GO-95), Rules for Overhead Electric Line Construction, revised January 15, 2020, ongoing.
<https://files.cpuc.ca.gov/gopher-data/go/GO-95.pdf>
- CPUC 2006 – California Public Utilities Commission. General Order 128 (GO-128), Rules for Construction of Underground Electric Supply and Communications Systems, revised January 2006, ongoing. https://docs.cpuc.ca.gov/published/GENERAL_ORDER/52591.htm
- EPRI 1982 – Electric Power Research Institute 1982. Transmission Line Reference Book: 345 kV and above. Accessed online at:
https://www.academia.edu/41079824/EPRI_Transmission_Line_Reference_Book_345_kV_and_above
- IP 2024a – Intersect Power (TN 256295). CAISO Phase II Study Confidentiality Request, dated 02-29-2024, dated May 10, 2024. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024n – Intersect Power (TN 260642). Updated Project Description December 2024, dated December 13, 2024. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- NERC 2024 – North American Electric Reliability Council. 2024 Reliability Standards for the Bulk Electric Systems of North America, Updated January 1, 2024, and ongoing.
- NIEHS 1998 – National Institute of Environmental Health Sciences (NIEHS). 1998. An Assessment of the Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, Working Group Report. Accessed online at:
http://www.niehs.nih.gov/health/assets/docs_a_e/emf1.pdf
- NIEHS 2002 – National Institute of Environmental Health Sciences (NIEHS). 2002. Electric and Magnetic Fields Associated with the Use of Electric Power.
https://www.niehs.nih.gov/sites/default/files/health/materials/electric_and_magn

etic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

RCI 2023bb – Rincon Consultants, Inc. (TN 252981). Chapter 4 Engineering dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2023ee – Rincon Consultants, Inc. (TN 252984). Chapter 1 Executive Summary dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description dated November 6, 2023. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2024k – Rincon Consultants, Inc. (TN 255082). CEC Data Request Response Set 2, dated March 15, 2024. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2024u – Rincon Consultants, Inc. (TN 256296). Data Request Response Set 4, dated May 10, 2024. Accessed online at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

WECC 2014 – Western Electricity Coordinating Council. WECC Regional Reliability Standards, updated on December 10, 2014, and is ongoing.

WHO 2002 – World Health Organization (WHO). 2002, Establishing a Dialogue on Risks from Electromagnetic Fields. Accessed online at: Radiation: Electromagnetic fields

WHO 2024 – World Health Organization (WHO). 2024 Electromagnetic fields (EMF). Accessed online at: <https://www.who.int/news-room/questions-and-answers/item/radiation-electromagnetic-fields>

5.14 Transportation

5.14.1 Environmental Setting

Existing Conditions

The proposed project is approximately nine miles northwest of Five Points, 40 miles southwest of Fresno, and immediately west of State Route 145. The project site boundary encompasses approximately 9,000 acres in an agricultural area within unincorporated Fresno County.

Access to the project site is provided locally by S. Sonoma Avenue, Mt. Whitney Avenue, and W. Kamm Avenue. Regional access would be provided by highways that provide access to these local roads, including Interstate 5, which is approximately 10 miles to the west of the project site, and State Route (SR) 145, which is approximately six miles to the east of the project site.

Descriptions of the roadways and highways likely to be utilized by vehicles travelling to and from the project site are provided below. For a map of the project site in relation to these roadways, see **Figure 5.14-1**.

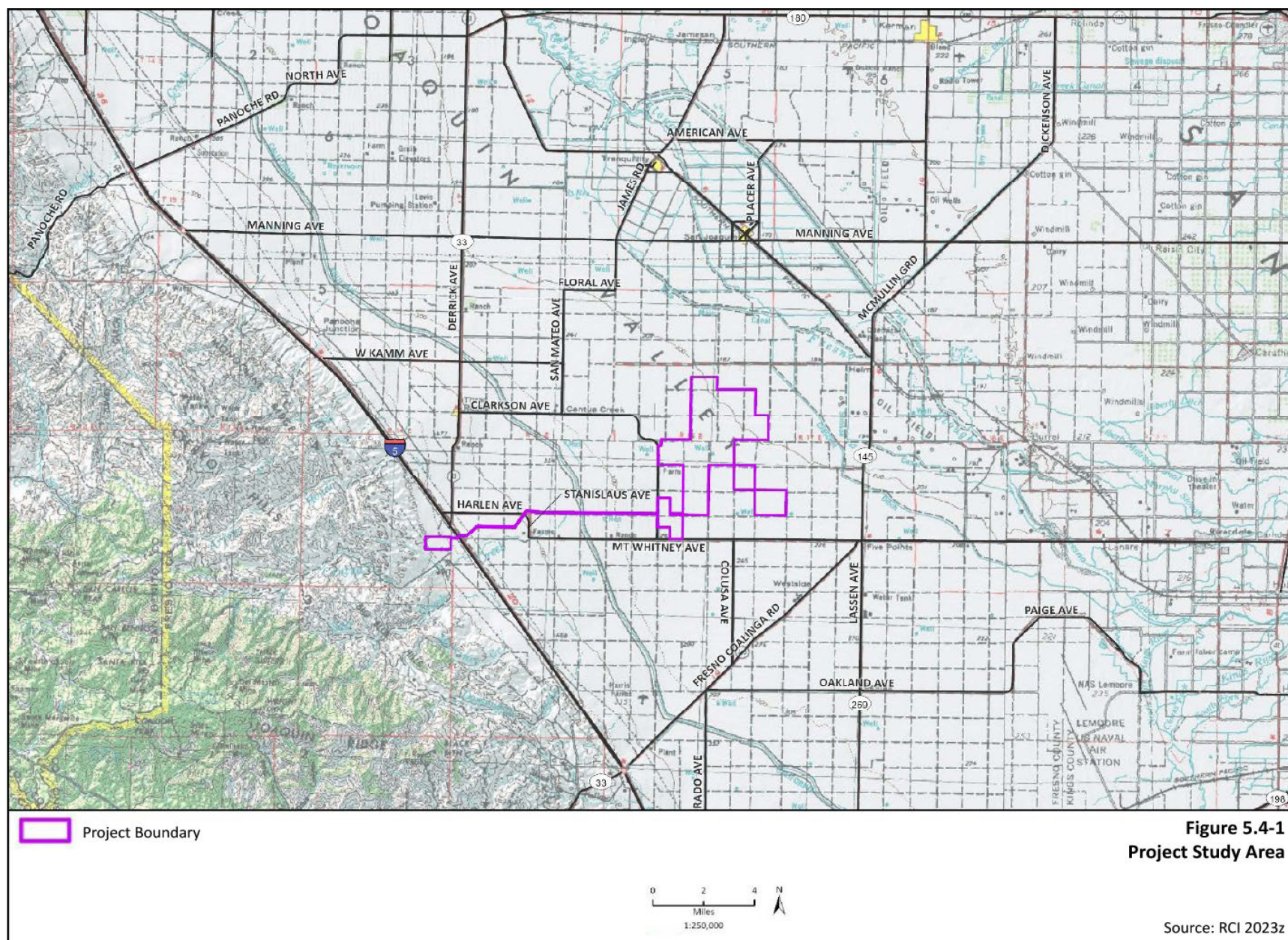
Regional

Major Highways

The project site is near three major highways that would provide primary regional access during both the construction and operational phases.

Interstate 5. I-5 is the main north/south Interstate Highway through California, running from the Mexico border south of San Diego to Canada north of Seattle, WA. I-5 is a main route for goods transportation and would be used extensively by heavy trucks during the construction phase for this project. I-5 is a four-lane divided freeway with grade-separated interchanges at SR 33 (connective to Mt. Whitney Avenue), SR 145 and W. Kamm Avenue near the project site.

State Route 145. This road is designated as an expressway and runs from I-5 at SR 33 to the north, connecting to SR 99, before turning east to end at SR 41. SR 145, near the project site, consists of one lane per direction.



According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways near the project site. The closest Eligible Scenic Highways are SR 198/SR 33 west of I-5, approximately 14 miles south of the project site, and SR 158 located 35 miles northeast of the project site (CALT 2024a).

Pedestrian / Bicycle / Transit Transportation

There are no existing or planned bikeways in the vicinity of the project site. There are no sidewalks or bicycle facilities that exist on roadways accessing the project site or within the immediate study area. There are also no existing or planned regional trails in the vicinity of the project site (Fresno2024b) (Fresno 2021a).

Coalinga Intercity Transit, operated by Fresno County Rural Transit Agency, operates intercity service to and from Fresno. The route includes SR 145 and Mount Whitney Avenue in Five Points. Currently, only one trip is operated daily, and it is opposite to what could serve this project. One bus runs from Five Points to Fresno in the morning and the reverse route in the afternoon (Fresno 2024c).

Central Valley Ridesharing (CVR) helps match commuters with an interest in ridesharing, covering Fresno and surrounding counties.

Railways

There is no passenger rail service in the vicinity of the site. Amtrak San Joaquin trains connect Fresno with other areas in California, but they do not travel close to the site.

Burlington North Santa Fe (BNSF) Railway serves Fresno County, but the nearest line is located approximately 28 miles to the east of the project site. San Joaquin Valley Railroad is a short line service operating in Fresno County. The nearest connection is approximately 12 miles to the east in Burrell. There appear to be no plans for line expansion.

Airports

Public and private airports located within a 20-mile radius of the project site are described below. The nearest commercial-service airport is Fresno Yosemite International Airport, over 33 miles away.

San Joaquin Airport is approximately eight miles north of the project site and two miles west of San Joaquin. It is privately-owned by Grouleff Aviation Inc. Eight aircraft are based at the airport, including one helicopter. It has one treated/dirt runway 2,500 feet long and serves only general aviation. It has been operating since 1973, has no control tower, and is private use only.

Harris Ranch Airport is located approximately 15 miles south of the project site. It is privately owned by Harris Farms but is open to the public. There is no control tower and

one asphalt runway approximately 2,800 feet long. This airport serves approximately 27 aircraft per day of 100 percent transient general aviation.

Lemoore Naval Air Station (Reeves Field) is located approximately 15 miles southeast of the project site. It is a military airport operated by the US Navy. It is for private use only and contains two concrete runways, each approximately 13,500 feet long. There is a control tower.

Local

Site Access

Two access points are proposed to S. Sonoma Avenue. In addition, two temporary construction access points are proposed – one to W. Kamm Avenue and one to W. Mt. Whitney Avenue. Design and construction of any access points must comply with applicable Fresno County and Caltrans standards and requirements, and local permits would be obtained, if any are required. Due to truck traffic during construction, 24 feet of pavement should be provided.

Roads in this area are primarily narrow and one lane per direction. Traffic is light, with almost exclusively agricultural adjacent land uses. Traffic congestion is not a concern in the study area, however, speed differentials, due to larger trucks that ship agricultural products and slow farm equipment, can present safety concerns.

S. Sonoma Avenue. This north/south minor collector roadway connects W. Clarkson Avenue to Mt. Whitney Avenue. In the study area, it consists of one 11-foot lane per direction, with 8-foot paved shoulders on both sides. No posted speed limit was observed. Both main project entrance locations would be from S. Sonoma Avenue (RCI 2024y)

Mt. Whitney Avenue. This east/west designated expressway connects to S. Fowler in Laton to the east and I-5 to the west. In the study area, it consists of one 10-foot lane per direction, undivided, with no shoulders. The posted speed limit is 55 miles per hour. Mt. Whitney Avenue would provide primary access to I-5 and points south, southwest and southeast, plus to SR 99 and points east and northeast, including metropolitan Fresno. There would be a temporary entrance for construction from Mt. Whitney Avenue (RCI 2024y).

W. Kamm Avenue / SR 33 / W. Clarkson Avenue. This east/west major collector roadway connects I-5 to SR 33 to the northwest of the site. W. Clarkson Avenue leads east from SR 33, connecting to the north end of S. Sonoma Avenue. In the study area, it consists of one 10-foot lane per direction, with variable width dirt shoulders on both sides. No posted speed limit was observed. W. Kamm Avenue also provides access to I-5, but to points north and west. There would be a temporary entrance for construction from W. Kamm Avenue (RCI 2024y).

Existing Traffic Volumes

Mt. Whitney Avenue had a 2023 daily traffic volume of 2,200 vehicles and a peak hour volume of 227. SR 145 had a 2023 daily traffic volume of 4,100 vehicles and a peak hour volume of 447 vehicles (RCI 2023aa). No volume data is available on S. Sonoma Avenue, but it is expected to be negligible – less than Mt. Whitney Avenue.

Regulatory

Laws, ordinances, regulations, and standards (LORS) related to transportation are summarized below. Details regarding all federal, state and local LORS that apply to the project are included.

Federal

Code of Federal Regulations. The Code of Federal Regulations, Title 49, contains the federal rules and regulations pertaining to the transportation of goods and materials.

State

California Vehicle Code (CVC) and Streets and Highways Code. The California Vehicle Code and the Streets and Highways Code contain requirements applicable to the licensing of drivers and vehicles, the transportation of hazardous materials, right-of-way and regulations on roadway encroachment during truck transportation and delivery.

Division 15, Chapters 1 through 5. Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California State Planning Law. Government Code, Section 65302 requires that the project must conform to the General Plan (Fresno 2024a).

California Senate Bill 743. Codified in Public Resources Code Section 21099, SB 743 required changes to the CEQA Guidelines (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. Pursuant to Public Resources Code Section 21099(b)(1), the criteria for determining the significance of transportation impacts must “promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses.” (See adopted CEQA Guidelines Section 15064.3(b), Criteria for Analyzing Transportation Impacts). To that end, in developing the criteria, the Governor’s Office of Land Use and Climate Innovation (LCI) proposed, and the California Natural Resources Agency certified and adopted, changes to the CEQA Guidelines that identify VMT as the most appropriate metric to evaluate a project’s transportation impacts. With the California Natural Resources Agency’s certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by “level of service” and other similar metrics, no longer constitutes a significant environmental effect under CEQA (Pub. Resources Code, Section 21099(b)(3)).

Local

Construction and operation of the project would be subject to policies and regulations contained within the County's general and specific plans, including the Fresno County General Plan (Fresno2024a) and the Fresno County Zoning Ordinance (Fresno 2024d), which include policies, goals, and implementation measures related to transportation.

Fresno County Ordinance Code. The Fresno County Ordinance Code contains the laws passed and enforced by the County.

Fresno County General Plan

Transportation and Circulation Element. The Transportation and Circulation Element presents a summary of existing facilities and operations, plus provides the framework for decisions regarding the countywide multimodal transportation system. It sets goals, policies, standards and implementation programs.

The following goals for a safe, convenient, and efficient transportation system apply to the project (Fresno 2024a):

- Goal TR-A: To plan and provide a unified, multi-modal, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods, including travel by walking, bicycle, or transit.
- Goal TR-C: To reduce travel demand on the County's roadway system and maximize the operating efficiency of transportation facilities so as to reduce the quantity of motor vehicle emissions and reduce the amount of investment required in new or expanded facilities.

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on traffic and transportation to be potentially significant. A master list of cumulative projects located within Fresno County is provided in **Appendix A, Table A-1**. The following projects, within 10 miles of this site, are part of the transportation cumulative setting. The remaining projects were deemed to be too far away or insignificant trip generation to contribute significantly to a cumulative transportation impact:

- FC-1: Akhavi LLC Project
- FC-4: Kamm Avenue Pistachio
- FC-6: Seneca Resources Corporation Project

5.14.2 Environmental Impacts

TRANSPORTATION	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines, section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, transportation.

5.14.2.1 Methodology and Thresholds of Significance

Methodology

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

The proposed project's potential impacts to transportation have been evaluated using a variety of resources, including the transportation section of the application (RCI 2023z) and the Traffic & Transportation Analysis in Appendix K of the application that was prepared by VRPA Technologies Inc. (RCI 2023aa). Traffic impacts from implementation of the proposed project are evaluated for the site by estimating trip generation for both the construction and operational phases of the project. Trip generation is based on the number of workers (both during construction and operational phases) and the expected number of trucks during construction.

An evaluation of VMT related to project construction and operation was conducted based on the CEQA Guidelines Section 15064.3(b). Construction trips typically are not analyzed in a VMT analysis because they are temporary and would not impact overall per capita VMT in the region.

Thresholds of Significance

Vehicle Miles Travelled Threshold

Pursuant to Senate Bill (SB) 743, evaluating transportation impacts under the California Environmental Quality Act (CEQA) has shifted from Level of Service (LOS) to vehicle miles traveled (VMT) (LCI 2018). The intent of SB 743 is to align transportation impacts under CEQA with the State's overall goals of increasing long-term sustainability by reducing greenhouse gas (GHG) emissions. The VMT analysis focuses on automobile and light-duty truck trips (LCI 2018). An evaluation of VMT related to project operations was conducted. Construction trips are not analyzed in a VMT analysis because they are temporary and would not impact overall per capita VMT in the region.

As Fresno County has not yet formally adopted its own VMT criteria, standards, or thresholds, this assessment follows current LCI guidance. Contained within the "Screening Thresholds for Land Use Projects" section is the following guidance used to "quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study":

Many local agencies have developed screening thresholds to indicate when a detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. (LCI 2018)

For this assessment, the project's impact to VMT would be considered less than significant if the project's estimated daily trips are less than 110 one-way trips.

Fresno County Level of Service Analysis Thresholds

Although traffic impacts under CEQA are measured using VMT analysis, Fresno County still uses "level of service" (LOS) to assess intersection and road segment operations to determine if any improvements are needed. LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined, ranging from LOS A (free-flow conditions) to LOS F (over-capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and the results are designated as LOS F.

As per the Fresno County General Plan, LOS of "C" or better is considered acceptable and is the target for roadways within the County. LOS "D" is the minimal accepted operational standard on rural County roadways and LOS "E" on State Routes (Fresno 2024a).

Roadway Segments. The LOS analysis methodology for roadway segments consists of comparing the daily traffic volumes to LOS criteria stated below in **Table 5.14-1** to

determine LOS. The LOS grades are a qualitative letter grade that represents operations of the roadway.

TABLE 5.14-1 ROADWAY CAPACITY BY ROAD TYPE – 2010 HCM PLANNING METHOD

Roadway Classification	LOS C Daily Capacity	LOS D Daily Capacity	LOS E Daily Capacity
Rural 4-Lane Road (45 mph)	17,700	30,700	31,300
Rural 2-Lane Road (45 mph)	8,500	15,400	16,400
Rural 2-Lane Road (30 mph)	4,800	12,700	16,300

Source: County of Fresno General Plan, Page 5-16 – Transportation and Mobility (Fresno 2024a)

Both road segments are expected to operate at acceptable levels of service during construction and during normal operations.

Unsignalized Intersections. Since no turning movement traffic volumes are available for intersections in the study area, no levels of service analysis were conducted. However, given the low road segment traffic volumes, acceptable LOS A or B would be expected at all intersections, with minimal delays.

5.14.2.2 Direct and Indirect Impacts

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Construction– *Less Than Significant Impact*

Based on the analysis below, the construction of the project would have a less than significant impact on conflicts with any programs, plans, ordinances or policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities in the project area.

Based on the assessment below, the addition of project-generated traffic during construction would not cause a substantial increase in traffic volumes within the transportation system affecting the efficiency of the transportation system, including transit, roadway, bicycle, and pedestrian facilities.

Additionally, any effect of project-generated traffic during construction would be temporary in nature and is not expected to result in any long-term impacts to the transportation system.

Therefore, construction of the project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, resulting in less than significant impact during construction. There are no transit, pedestrian, or bicycle facilities in this area.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Project Trip Generation, Distribution, and Assignment

Approximately 50 percent of the traffic would access the project site from the northeast (Fresno area), approximately 20 percent from the north and south via I-5, and approximately 30 percent of the traffic would access the project from the southeast (Visalia area) (RCI 2023aa).

Construction Trips

The majority of construction vehicle trips would be associated with construction employees traveling to and from the site during peak hours. Construction personnel are anticipated to travel primarily from the northeast (Fresno area). Additional personnel would come from the southeast (i.e., Visalia area). It is assumed that construction staff not drawn from the local labor pool would stay in the local hotels in Fresno or other local cities. Thus, workers would not have to travel far or add traffic to roads outside of Fresno County.

It is anticipated the construction workforce would commute to the site each day from local communities and report to the designated construction staging yards prior to the beginning of each workday. It was conservatively assumed that workers would arrive during the AM peak hour (for adjacent street traffic) and leave the site during the PM peak hour. It was also assumed that the majority of the material delivery and onsite trucks would enter and exit the site during the non-peak hours with approximately 30 percent entering and exiting during the peak hours. Heavy equipment used at the site would not be hauled to and from the project site daily but would be brought in at the beginning of construction and taken out upon completion of construction.

Construction traffic for the solar facilities would consist of worker passenger vehicles and heavy trucks delivering parts, equipment, and materials to the project site. Construction of the project is anticipated to last 18 to 36 months, beginning in late 2025 or early 2026. Construction activities for the project generally fall into three main categories: site preparation; system installation; and testing, commissioning, and clean up. Laydown areas, office trailers and workforce parking would be located within the site or on offsite temporary laydown yards. Construction would primarily occur during daylight hours, Monday through Friday, between 6:00 AM and 6:00 PM; however, some work may occur on Saturday and Sunday, as required, to meet the construction schedule and/or to promote the health and safety of workers.

It is anticipated that construction employees would primarily use SR-145 or SR-269 to travel to the site area, then use Mt. Whitney Avenue and S. Sonoma Avenue as points of ingress/egress to the project site and that, once onsite, they would access various sections via the existing and improved internal network of dirt roads. Some heavy construction trucks that come from outside of Fresno County are also anticipated to use I-5 from the north and south.

The assessment for construction is based on the construction activity that generates the highest construction traffic, which is expected to be construction of the solar facilities. The average daily workforce onsite during construction of the solar facilities is expected to include approximately 2,011 construction, supervisory, support, and construction management personnel. A proposed 50 percent vehicle trip reduction during construction through the development and implementation of a Construction Traffic Control Plan, would reduce the number of construction workforce round trips to 1,006.

It is estimated that there would be an average of 180 trucks, a combination of delivery and onsite trucks, traveling to and from the site daily. Trip generation estimates for the project construction phase are summarized in **Table 5.14-2** below.

TABLE 5.14-2 TRIP GENERATION- CONSTRUCTION			
Construction	Daily	AM Peak	PM Peak
Workers	2011	2011	2011
Traffic Control Plan Reduction	1005	1005	1005
NET Worker Trips	1006	1006	1006
Trucks	180	60	60
TOTAL	1186	1066	1066

Source: RCI 2023aa – Rincon Consultants, Inc., Appendix K

Road segment traffic volumes during construction are forecast to be:

- SR-145 (north of Mt. Whitney): 4,219 vehicles per day, 554 peak hour
- Mt. Whitney Avenue (east of SR-145): 2,675 vehicles per day, 653 peak hour

Construction Levels of Service

The LOS was evaluated for the following road segments, during construction conditions:

- SR-145: LOS B or better
- Mt. Whitney Avenue: LOS B or better

PG&E Utility Switchyard and Downstream Network Upgrades

There would be minimal vehicle traffic during construction. The work would be done away from public roadways. Any effect of project-generated traffic during construction would be temporary in nature and is not expected to result in any long-term impacts to the transportation system. The project would have no conflicts with any programs, plans, ordinances or policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Operation– *No Impact*

Based on the analysis below, the addition of project-generated traffic during project operation would not cause a substantial increase in traffic volumes within the transportation system affecting the efficiency of the transportation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, the project would not

conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, resulting in no impact.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Operation Trips

Normal operation and maintenance of the solar facility would require trucks, forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. The solar facility would require 60 full-time personnel for operation, maintenance, and security. For a conservative analysis purposes, it is assumed that all of the 60 personnel would arrive during the AM peak hour and depart during the PM peak hour of the adjacent roads. Trip generation estimates for project operation and maintenance phases are also summarized in **Table 5.14-3**.

TABLE 5.14-3 TRIP GENERATION- OPERATION			
	Daily	AM Peak	PM Peak
Operations and Maintenance	60	60	60

Source: RCI 2023aa – Rincon Consultants, Inc., Appendix K

Road segment traffic volumes during normal operations are forecast to be:

- SR-145 (north of Mt. Whitney): 4,130 vehicles per day, 477 peak hour
- Mt. Whitney Avenue (east of SR-145): 2,253 vehicles per day, 280 peak hour

Operation Levels of Service

The LOS was evaluated for the following road segments, during operations conditions:

- SR-145: LOS B or better
- Mt. Whitney Avenue: LOS B or better

PG&E Utility Switchyard and Downstream Network Upgrades

There would be minimal traffic at the PG&E Switchyard during operation and minimal traffic associated with operation and maintenance of the PG&E downstream network upgrades. There would be no conflicts with any programs, plans, ordinances or policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Construction– *Less Than Significant Impact*

Based on the analysis below, project construction would not conflict with or be inconsistent with CEQA Guidelines section 15063.3, subdivision (b). Therefore, project construction impacts would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

During construction, daily trips made by workers and delivery/haul trucks to and from the project would result in an increase in VMT. However, this increase in VMT would be temporary in nature, only lasting the duration of the construction phase. The project's effect on VMT during construction would therefore not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) and is considered to be a less than significant impact.

PG&E Utility Switchyard and Downstream Network Upgrades

During construction, trips made by workers and delivery/haul trucks to and from the switchyard would result in an increase in VMT. However, this increase in VMT would be temporary in nature, only lasting the duration of the construction phase. The effect on VMT during construction would therefore not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Operation— Less Than Significant Impact

As described below, project operations would generate net daily trips that are less than the threshold of 110 one-way trips. Therefore, the project would not conflict or be inconsistent with CEQA Guidelines section 15064.2, subdivision (b) and the VMT impact would be considered less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

This project component is estimated to generate a total of 60 daily operational trips to/from the project. Considering that the net daily trips would be less than the threshold of 110 one-way trips, the VMT from Operations and Maintenance would not exceed the threshold.

PG&E Utility Switchyard and Downstream Network Upgrades

There would be minimal traffic at the PG&E Switchyard during operation and for the operation and maintenance of the PG&E downstream network upgrades.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction— No Impact

Based on the analysis below, project construction would not pose a hazard due to a geometric design feature or incompatible uses. Therefore, there would be no impacts from project construction.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

This project component does not propose changes to any existing roadways or intersections during the construction phase. Two main project entrances are proposed to S. Sonoma Avenue. In addition, two additional temporary entrances are proposed for during construction only – one to W. Mt. Whitney Ave and one to W. Hamm Ave. All four entrances may be used during construction. All four entrances would be constructed where existing farming roads exist and not are anticipated to introduce geometric hazards. The roads are straight with no sight distance impediments. Slow truck traffic would not be a hazard as drivers are already used to slower farm equipment. Therefore, the construction entrances would not result in a substantial increase in hazards due to geometric design features.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of this project component does not propose changes to any existing roadways or intersections during the construction phase. All four entrances would be constructed where existing farming roads exist and not are anticipated to introduce geometric hazards. The roads are straight with no sight distance impediments. Slow truck traffic would not be a hazard as drivers are already used to slower farm equipment. Therefore, the construction entrances would not result in a substantial increase in hazards due to geometric design features.

Operation– No Impact

Based on the analysis below, project operation would not pose a hazard due to a geographic design feature or incompatible use. Therefore, there would be no impacts from project operation.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

This project component does not propose changes to any existing roadways or intersections, or to site entrances, for the project normal operations. Operations would not result in a substantial increase in hazards.

PG&E Utility Switchyard Downstream Network Upgrades

The project does not propose changes to any existing roadways or intersections, or to site entrances, for the project normal operations. Operations would not result in a substantial increase in hazards.

d. Would the project result in inadequate emergency access?

Construction– Less Than Significant Impact

Based on the analysis below, project construction would have a less than significant impact on emergency access.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

Emergency vehicles would maintain right-of-way over construction vehicles. Construction activities would not prevent access for emergency vehicles. The addition of project-generated traffic during construction along study roadways and at study intersections would have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles.

PG&E Utility Switchyard and Downstream Network Upgrades

Emergency vehicles would maintain right-of-way over construction vehicles. Construction activities would not prevent access for emergency vehicles. The addition of project-generated traffic during construction along study roadways and at study intersections would have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles.

Operation— Less Than Significant Impact

Based on the analysis below, project operation would have a less than significant impact on emergency access.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie

Emergency vehicles would maintain right-of-way over project-related vehicles. Operational activities would not prevent access for emergency vehicles. The addition of generated traffic during normal operations along study roadways and at study intersections would have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles.

PG&E Utility Switchyard and Downstream Network Upgrades

Emergency vehicles would maintain right-of-way over project-related vehicles. Operational activities would not prevent access for emergency vehicles. The addition of generated traffic during normal operations along study roadways and at study intersections would have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles.

5.14.2.3 Cumulative Impacts

Construction— Less Than Significant Impact

Based on the analysis below, the addition of project-generated traffic to the cumulative scenario for these jurisdictional components during construction is not expected to result in LOS issues. In addition, traffic generated during construction would be temporary in nature and is not expected to result in any long-term VMT impacts to the transportation system from cumulative construction. Therefore, project construction impacts would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Cumulative Project Trip Generation & Distribution

For cumulative traffic impacts, staff reviewed **Appendix A, Table A-1**. The timing of these cumulative projects varies and is often uncertain. In addition, these projects are far enough away from this project site that cumulative traffic volumes are expected to be less than significant.

Roadway LOS with Cumulative Construction Traffic

Due to the low expected cumulative trip generation around the project site, a qualitative assessment indicates that all roadway segments are projected to operate acceptably (LOS B or better) with the addition of construction traffic in the cumulative scenario. The cumulative projects are not close to each other so minimal cumulative effects are anticipated.

PG&E Utility Switchyard and Downstream Network Upgrades

Cumulative Project Trip Generation & Distribution

For cumulative traffic impacts, staff reviewed **Appendix A, Table A-1**. The timing of these cumulative projects varies and is often uncertain. In addition, these projects are far enough away from this project site that cumulative traffic volumes are expected to be less than significant.

Roadway LOS with Cumulative Construction Traffic

Due to the low expected cumulative trip generation around the project site, a qualitative assessment indicates that all roadway segments are projected to operate acceptably (LOS B or better) with the addition of construction traffic in the cumulative scenario. The cumulative projects are not close to each other so minimal cumulative effects are anticipated.

Operation— *Less Than Significant Impact*

Based on the analysis below, the addition of generated traffic to the cumulative scenario during project operations would not cause a substantial increase in traffic volumes within the transportation system affecting the efficiency of the transportation system, including transit, roadway, bicycle, and pedestrian facilities (none exist in the immediate area). Therefore, project operation impacts would be less than significant.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Cumulative Project Trip Generation & Distribution

For cumulative traffic impacts, staff reviewed **Appendix A, Table A-1**. Operations trip generation is low, and all of the cumulative projects are far enough away from this site that cumulative traffic volumes are expected to be less than significant.

Roadway LOS with Cumulative Operational Traffic

Due to the low expected cumulative trip generation around the project site, the assessment indicates that all roadway segments are projected to operate acceptably (LOS C or better) with the addition of operations traffic in the cumulative scenario. The resultant V/C ratios are not expected to change from existing conditions.

PG&E Utility Switchyard and Downstream Network Upgrades

Cumulative Project Trip Generation & Distribution

For cumulative traffic impacts, staff reviewed **Appendix A, Table A-1**. Operations trip generation from this site is low, and all of the cumulative projects are far enough away from this site that cumulative traffic volumes are expected to be less than significant.

Roadway LOS with Cumulative Operational Traffic

Due to the low expected cumulative trip generation around the project site, the assessment indicates that all roadway segments are projected to operate acceptably (LOS C or better) with the addition of operations traffic in the cumulative scenario. The resultant V/C ratios are not expected to change from existing conditions.

5.14.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.14-3 contains staff's determination of conformance with applicable local, state and federal LORS, including any proposed condition of certification (COC), where applicable, to ensure the jurisdictional project components would comply with LORS. As shown in this table, staff concludes that with implementation of specific COCs, the project would be consistent with all applicable LORS. The subsection below, "Staff Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.14-3 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis For Determination
Federal	
Code of Federal Regulations	
Title 49 CFR, Subtitle B, Sections 171-177 and 350-399 Requires proper handling and storage of hazardous materials during transportation.	Yes. The project transportation would align with all established standards for the transportation of hazardous materials. See COC TRANS-1 .
State	

TABLE 5.14-3 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
California Vehicle Code (CVC)	
CVC Sections 13369, 15275, and 15278 Addresses the licensing of drivers and classifications of licenses required for the operation of particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are required.	Yes. The project would follow the guidelines specified in these sections of the CVC. See COC TRANS-2 .
CVC Section 25160 et seq. Addresses the safe transport of hazardous materials.	Yes. The project would follow the guidelines specified in these sections of the CVC.
CVC Sections 2500-2505 Authorizes the issuance of licenses by the Commissioner of the CHP for the transportation of hazardous materials including explosives.	Yes. The project would follow the guidelines specified in these sections of the CVC.
CVC Section 31300 et seq. Requires transporters to meet proper storage and handling standards for transporting hazardous materials on public roads.	Yes. Transporters would comply with standards for the transportation of hazardous materials on state highways throughout construction and operations. The State Emergency Response Commission (SERC) would ensure adherence to CVC Section 31303, mandating that shippers of hazardous materials opt for the shortest route possible to and from the site.
CVC Sections 31600 - 31620 Regulates the transportation of explosive materials.	Yes. The project would conform to CVC §31600 – 31620.
CVC Sections 32000 - 32053 Regulates the licensing of carriers of hazardous materials and includes noticing requirements.	Yes. The project would conform to CVC §31600 – 31620.
CVC Sections 32100 - 32109 and 32105 Establishes special requirements for the transportation of substances presenting inhalation hazard and poisonous gases and require that shippers of inhalation or explosive materials contact the CHP and apply for a Hazardous Material Transportation License.	Yes. The project would comply by mandating shippers of inhalation or explosive materials to reach out to the CHP and secure a Hazardous Materials Transportation License.
CVC Sections 34000 - 34121 Establishes special requirements for the transportation of flammable and combustible fluids over public roads and highways.	Yes. The project would conform to CVC §§34000 – 34121.
CVC Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5–7, 34506, 34507.5 and 34510–11 Regulates the safe operation of vehicles, including those used to transport hazardous materials.	Yes. The project would follow the guidelines specified in these sections of the CVC.
CVC Sections 35780 Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Yes. Transporters would secure transportation permits for all overloads, as mandated.
CVC Sections 35550 - 35559 Regulates weight and load limitations.	Yes. The project would follow the guidelines specified in these sections of the CVC.
California Streets and Highways Code	

TABLE 5.14-3 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
S&HC Sections 660, 670, 1450, 1460 et seq., 1470, and 1480 Regulates right-of-way encroachment and the granting of permits for encroachments on State and County roads.	Yes. The project would follow the guidelines specified in these sections of the S&HC.
S&HC Sections 117, 660 - 711 Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	Yes. Encroachment permits would be obtained by transporters, as required.
S&HC Sections 660 - 711 Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Yes. Transportation permits would be obtained by transporters for all overloads, as required.
California State Planning Law	
Government Code, Section 65302 Requires that the project must conform to the General Plan.	Yes. The project would align with the provisions of the Fresno County's General Plan.
Local	
Fresno County Municipal Code	
Chapter 11.32 regulates and permits vehicle/load weight and size limitations. Within Fresno County, transportation permits for operating any oversize or overweight vehicles are required. Oversize or overweight are defined as any vehicle or combination of vehicles or special mobile equipment that exceeds the size or weight specified in Sections 35000 through 35796 of the CVC. The maximum gross weight for a vehicle is 80,000 pounds. The maximum axle weight for a single axle is 20,000 pounds. A permit from Fresno County would allow vehicles to use the streets approved in the permit application. Specific truck routes within the County are not identified.	Yes. The project would comply with these sections of Fresno County Municipal Code. See COC TRANS-3 .
Fresno County General Plan	
Transportation and Circulation Element specifies long-term planning goals and procedures for transportation infrastructure system quality within Fresno County.	Yes. No substantial impact on the County's traffic and transportation infrastructure would be caused by the project.

5.14.4 Conclusions and Recommendations

As discussed above, the project would have a less than significant impact related to transportation and with implementation of COCs, would conform with applicable LORS. Staff recommends adopting the COCs as detailed in subsection "5.14.5 Proposed Conditions of Certification" below. No mitigation measures related to transportation are recommended for the non-jurisdictional project components.

5.14.5 Proposed Conditions of Certification

TRANS-1 The project owner shall comply with limitations imposed by Caltrans and other relevant jurisdictions, including the County of Fresno, on vehicle sizes, weights, driver licensing, and truck routes.

Verification: The project owner shall retain copies of permits and supporting documents on-site for CPM inspection if requested.

TRANS-2 The project owner shall ensure that permits and/or licenses are secured from the relevant administering agency, including California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports (MCR's) copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-3 The project owner shall prepare and implement a Construction Management Plan (CMP). The CMP shall address the movement of workers, vehicles, equipment, and materials, including arrival and departure schedules, carpooling, a parking/staging plan, and designated workforce and delivery routes. Traffic control plans shall be prepared as necessary to address construction staging, as well as any roadway or lane closures and shall include any signage or roadway lighting improvements deemed necessary during construction. The CMP shall address means of access for emergency vehicles to the project, as well as means of maintaining access to any adjacent residential and commercial property during the construction of the project.

The CMP shall include procedures to restore damages to existing roadways caused by project construction traffic. The construction contractor shall work with Fresno County and Caltrans to prepare a schedule and mitigation plan for the roadways along construction routes, in accordance with the procedures established by the CMP.

Verification: At least 60 calendar days prior to the start of construction, the project owner shall submit the CMP to Caltrans and Fresno County for review and comment and to the compliance project manager (CPM) for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to Caltrans and Fresno County requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from Caltrans or Fresno County, or any other interested agencies, along with any changes to the CMP, for CPM review and approval. After CPM review and approval, the project owner shall provide completed copies of the final CMP to Caltrans and Fresno County and any other interested agencies, sending copies of the correspondence to the CPM.

5.14.6 Recommended Mitigation Measures

No mitigation measures for non-jurisdictional project components are recommended for transportation.

5.14.7 References

- CALT 2024a – Caltrans 2024 – Caltrans GIS Data Traffic Volumes AADT. Accessed online at: <https://gisdata-caltrans.opendata.arcgis.com/>
- Fresno 2021a – Fresno County 2024 – Fresno County Regional Trails Plan, April 2021, Accessed online at: <https://fresnocog.wpenginepowered.com/wp-content/uploads/2023/02/Fresno-County-Regional-Trails-Plan-FINAL.pdf>
- Fresno 2024a – Fresno County 2024 – Fresno County. General Plan Policy Document Final, February 2024. Accessed online at: https://www.fresnocityca.gov/files/sharedassets/county/v/3/public-works-and-planning/development-services/planning-and-land-use/environmental-impact-reports/general-plan-review/fcgrpr_general-plan_prd-county_01-12_24-clean.pdf
- Fresno 2024b – Fresno County 2024 – Fresno County Regional Active Transportation Plan, May 2024. Accessed online at: <https://fresnocog.wpenginepowered.com/wp-content/uploads/2024/05/Ch1-4.pdf>
- Fresno 2024c – Fresno County 2024 – Fresno County Rural Transit Agency website, June 2024. Accessed online at: <https://www.ruraltransit.org/>
- Fresno 2024d – Fresno County 2024 – Zoning Ordinance of the County of Fresno, February 20, 2024. Accessed online at: <https://www.fresnocityca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/zoning-ordinance>
- LCI 2018 – California Governor’s Office of Land Use and Climate Innovation (LCI) (formerly known as Planning and Research), 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Accessed online at https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf
- RCI 2024y – Rincon Consultants, Inc. (TN 258570). Data Response Set 6 - Appendix C REV 1 DR HAZ-2 Design Drawings, dated August 20, 2024. Accessed online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023z – Rincon Consultants, Inc. (TN 252977). Section 5-4 Traffic and Transportation, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023aa – Rincon Consultants, Inc. (TN 252979). Appendix K Traffic and Transportation Analysis, dated November 6, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

5.15 Visual Resources

5.15.1 Environmental Setting

Existing Conditions

Regional Setting

Fresno County is in the central portion of the State of California and was incorporated in 1856. As of the 2020 Census, the population was 1,008,654 and has a total area of 5,011 square miles. Agriculture is the primary industry with over three hundred different crops grown in the area. Fresno County contains five distinct geographic areas: the Coast Range Foothill Area, the Westside Valley Area, the Eastside Valley Area, the Sierra Foothill Area, and the Sierra Nevada Mountain Area. The project site and the surrounding vicinity are in the Westside Valley Area, which is visually characterized by the Interstate 5 (I-5) freeway, the flat valley floor, and expansive agricultural lands consisting of orchards, row crops, and tilled or retired lands. These large farms provide a sense of open space, emphasize the county's rural and farming heritage, and allow motorists opportunities for unrestricted panoramic views. The project site vicinity is characterized by a variable patchwork of parcels containing young and mature orchards such as almonds, pistachios, plums, orange, peach and nectarine trees, rows of ground crops such as tomatoes and cotton as well as grape vineyards, and empty, tilled lands with bare soil and patches of dried grasses. Parcels near the proposed solar facility also include swaths of established annual grasses and perennial shrubs. The natural landscape of the project site has been highly disturbed due to grading and tilling for farming.

Project Site

The project is located in an agricultural area of unincorporated Fresno County, south of the community of Cantua Creek. The solar photovoltaic facility (solar facility), battery energy storage system (BESS), and step-up substation would be located on approximately 9,100 acres of land currently owned by Westlands Water District, between South Sonoma Avenue to the west and South Butte Avenue to the east. The project's approximately 15-mile generation-intertie (gen-tie) line would span west from the intersection of South Sonoma Avenue and West Harlan Avenue to immediately west of I-5, where it would connect to the new utility switchyard along Pacific Gas and Electric Company's (PG&E) Los Banos-Midway #2 500 kV transmission line. The primary project components include 1,150-megawatt solar facility, 4,600 megawatt-hour BESS, 34.5-500 kilovolt grid step-up substation, 15-mile 500 kilovolt generation intertie (gen-tie) line and PG&E owned 500 kilovolt utility switchyard along the Los Banos-Midway #2 500 kilovolt transmission line.

The landscape in the project vicinity is primarily agricultural and land cover types include retired agricultural lands, tilled and disked fields containing ruderal vegetation,

and some limited areas of active farming that includes row crops and orchards as well as associated dirt access roads, field and road shoulders, basins, ditches, and berms. Rural residential commercial, and agricultural/industrial developments are sparsely located proximate to the project site. Groups of residences are located along main roads such as Mount (Mt.) Whitney Avenue and South Sonoma Avenue with some isolated single-family residences located off private roads central to larger agricultural plots. The proposed gen-tie line spans privately-owned land on the western portion of the project site. The California Aqueduct, running generally north-south, bisects the gen-tie route. Compacted soil and/or paved roads border and separate parcels and land cover types.

The topography in the vicinity of the project site is relatively flat and offers open, expansive views of distant hills and mountains that frame the valley. West of the project site, west of I-5, the flat valley floor rises into the Ciervo Hills (to the northwest) and Big Blue Hills (to the southwest). The Ciervo Hills and Monocline Ridge are visible to the west-northwest of the proposed utility switchyard, approximately three miles distant; the Big Blue Hills are visible to the west-southwest, approximately three miles distant. While these features are generally prominent in the viewshed, the dusty haze on days with poor air quality intermittently obscures their view. On clear, still days, the silhouette of the hills dominates the viewshed.

There are no designated or eligible state scenic highways which partially or fully intersect the project site (Caltrans 2018). The County of Fresno identifies I-5 as a County-designated Scenic Highway (Fresno 2024). There are no designated or recognized scenic vistas or scenic resources within a five-mile radius of the project site or within a one-mile radius of the gen-tie line. There are no natural features within these radii recognized for their aesthetic, botanical, or ecological value. No manufactured features that are unique or represent significant innovation are present.

Existing Utilities

An existing network of overhead distribution lines, strung along wooden poles, follows local public streets throughout the project vicinity. The PG&E Los Banos-Midway #2 500 kV transmission line and associated lattice steel towers generally parallels I-5 approximately one mile to the west. Additionally, an existing 250 kV transmission line generally parallels I-5 approximately 0.5 miles to the east. There is an existing PG&E Cantua Solar Station that is approximately 150-acres located at the intersection of Stanislaus Avenue and Mt. Whitney Avenue is south of the proposed gen-tie line and approximately six miles southwest of the proposed solar facility. The approximately 4.5-acre Superior Almond Solar Power array is also located near the western extent of the proposed gen-tie line near the intersection of South Kings Avenue and West Harlan Avenue. An approximately 450-acre solar facility is located approximately two miles south of the project's southernmost extent. Numerous other solar facilities are located to the north, east, and south of the project site.

Existing Lighting

No street lighting exists along the local roadways in the vicinity of the project site. Along I-5, occasional standalone light fixtures are provided near off/on-ramps, but no regular lighting occurs along the interstate. Headlights from vehicles on the roadway are a source of temporary light. Additional sources of light are provided by scattered residences and agricultural and commercial facilities.

Regulatory

Federal, state, and local government laws, ordinances, regulations, and standards (LORS) relating to aesthetics and visual resources applicable to the proposed project and project site are set forth below.

Federal

There is no Federal LORS that apply to visual resources for the project.

State

There is no State LORS that apply to visual resources for the project.

Local

Fresno County Code of Ordinances. The Fresno County Code of Ordinances (County Code) includes guidelines and standards for development within the County, including but not limited to: Outdoor Lighting and Illumination – Chapter 15, Article 20, Section 15-2015, which prescribes development and site regulations related to outdoor lighting fixtures and control and illumination of outdoor artificial light to minimize light pollution and glare.

Fresno County General Plan

Open Space and Conservation Element. The Open Space and Conservation Element evaluates the scenic resources of Fresno County and provides policies intended to protect and ensure development enhances those resources through various measures including identification, development review, acquisition, and other methods. The policies in the Fresno County General Plan concerning scenic resources and scenic highways relevant to the project are as follows:

- Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter open space easements for designated scenic areas.
- Policy OS-K.4: The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.

- Policy OS-L.1: The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways.
- Policy OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles: Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of way.

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on visual resources to be potentially significant. Cumulative projects listed in **Appendix A, Table A-1** that may individually have impacts to visual character and quality include the pistachio processing facility, bridge replacement, zoning change and solar facility. These cumulative projects that range from 6.5 to 8.75 miles from the project would not be visible when combined with the project and are outside the viewshed of the project site¹. Therefore, the project would not contribute to a cumulative impact to visual resources.

5.15.2 Environmental Impacts

VISUAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare which would adversely	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ "Based on the curve of the Earth: Standing on a flat surface with your eyes about 5 feet off the ground, the farthest edge that you can see is about 3 miles away." (Roland 2019)

VISUAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project: affect day or nighttime views in the area?				

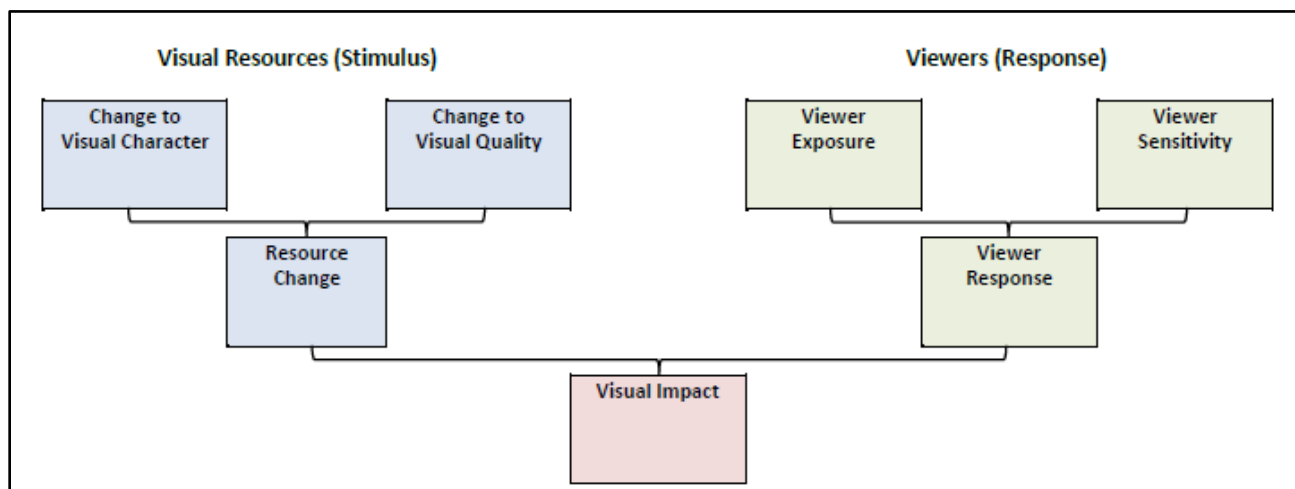
Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, aesthetics.

5.15.2.1 Methodology and Thresholds of Significance

The California Energy Commission (CEC) evaluates a proposed project in accordance with the California Environmental Quality Act (CEQA) codified in California Public Resources Code (Pub. Res. Code) § 21000 et seq., and the Guidelines for the Implementation of the California Environmental Quality Act (CEQA Guidelines) codified in the California Code of Regulations (CCR), Title 14 § 15000 et seq.

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project. The analysis of visual resource impacts follows the guidance outlined in the publication *Guidelines for Visual Impact Assessment of Highway Project (Guidelines)* published by the United States Department of Transportation (US DOT), Federal Highway Administration (FHWA) in January 2015 (FHWA 2015).

The organizational chart below illustrates the process used.



The following steps were followed to assess the potential visual impacts of the proposed project:

- Define the project location and setting.
- Identify visual assessment units and key views.
- Analyze existing visual resources, resource change and viewer response.

- D. Assess the visual impacts of proposed project elements by location as perceived by the various highway or roadway users and local residents.
- E. Propose measures to offset visual impacts.

Visual Assessment Units and Key Views

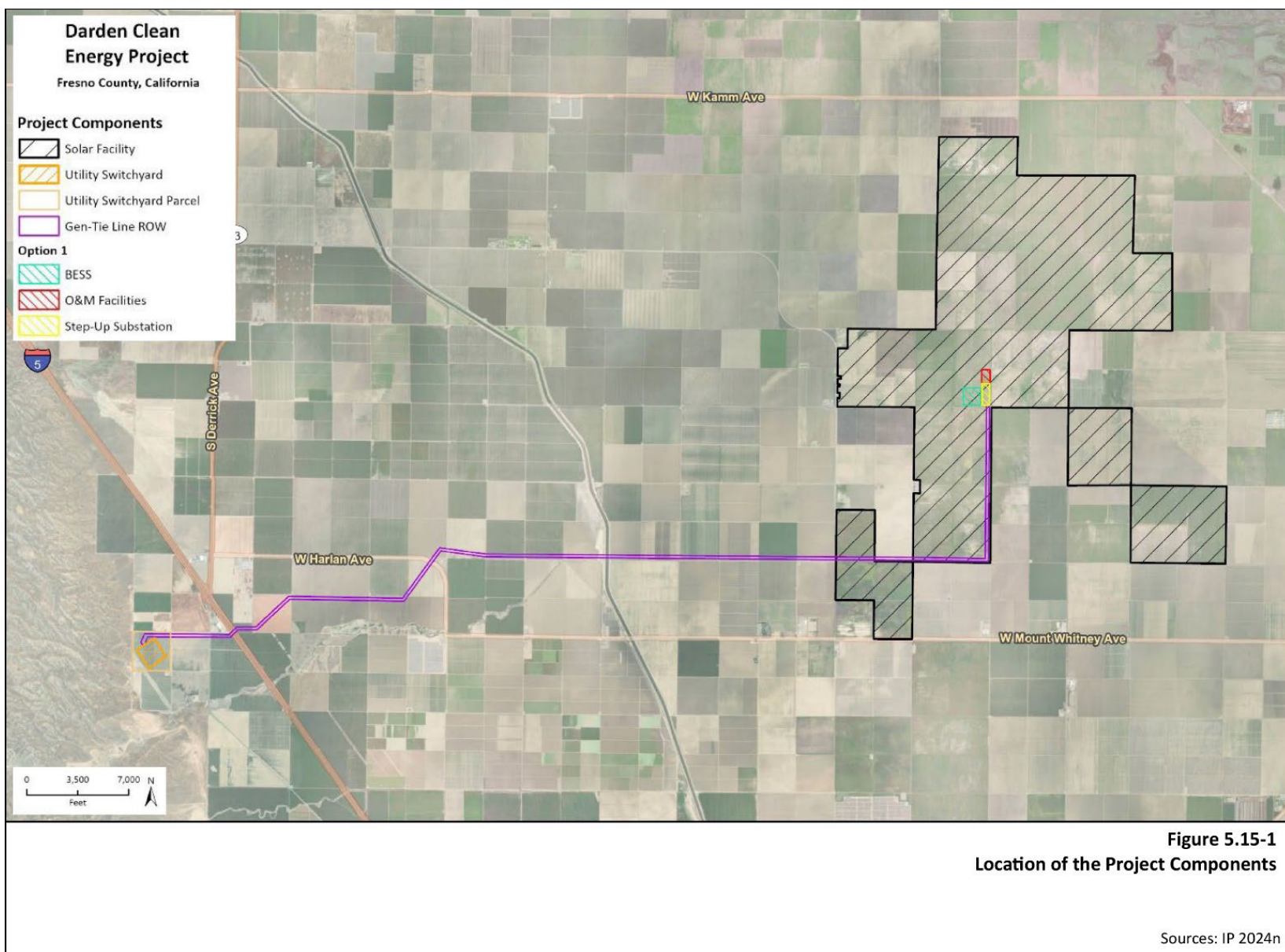
A methodology for assessing visual attributes is to divide the corridor into a series of “outdoor rooms” or visual assessment units that have common visual characteristics. Each visual assessment unit has its own visual character and visual quality. It is typically defined by the limits of a viewshed, or by an area of similar visual character. The viewshed is comprised of the surface area visible to observers both to and from the proposed project site. The limits of a viewshed are defined by the visual extent of views located to and from the project site.

Viewing Distances

Views are categorized by the following distances:

- Foreground – 0 to ¼ mile
- Middleground – ¼ mile to 3 miles
- Background – greater than 3 miles

Figure 5.15-1 shows the location of the project components. **Figure 5.15-2** is a location map of the key views. **Figures 5.15-3** through **5.15-8** show the existing views from each key view.



- Viewpoint 1 - S Derrick Ave & West Side Fwy
- Viewpoint 2 - W Harlan Ave - Corner
- Viewpoint 3 - W Mt Whitney Ave - Residences
- Viewpoint 4 - S. Yuba Avenue & W. Kamm Avenue
- Viewpoint 5 - W Kamm Ave
- Viewpoint 6 - W Cerini Ave - Residences

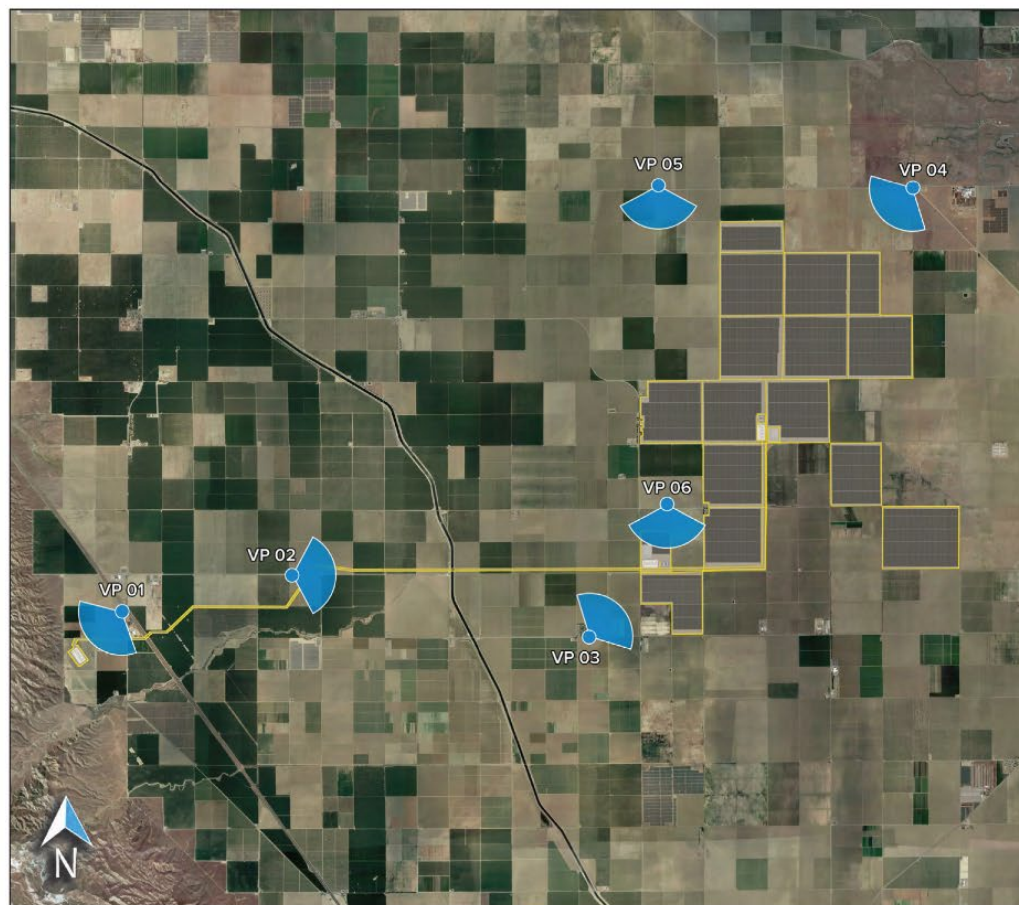


Figure 5.15-2
Key View Map

Sources: RCI 202400

Visual Assessment Unit Attributes

VISUAL RESOURCES
5.15-8



Figure 5.15-3
Key View 1 - Existing View

Sources: RCI 202400

Key View 1 Looking southwest S Derrick Avenue and Westside of I-5 freeway. This view is characteristic of the landscape on the west side of I-5. The asphalt road of the freeway and road can be seen in the foreground, middleground and background views. Mature agricultural plots in the background are seen on both sides of the road, with a tilled, inactive plot on the other side. The faint outlines of transmission towers are in the distance and present as vertical lines in an otherwise horizontal featured landscape against the golden foothills. One light standard is presented in view of the driver. The Big Blue Hills dominate the background.

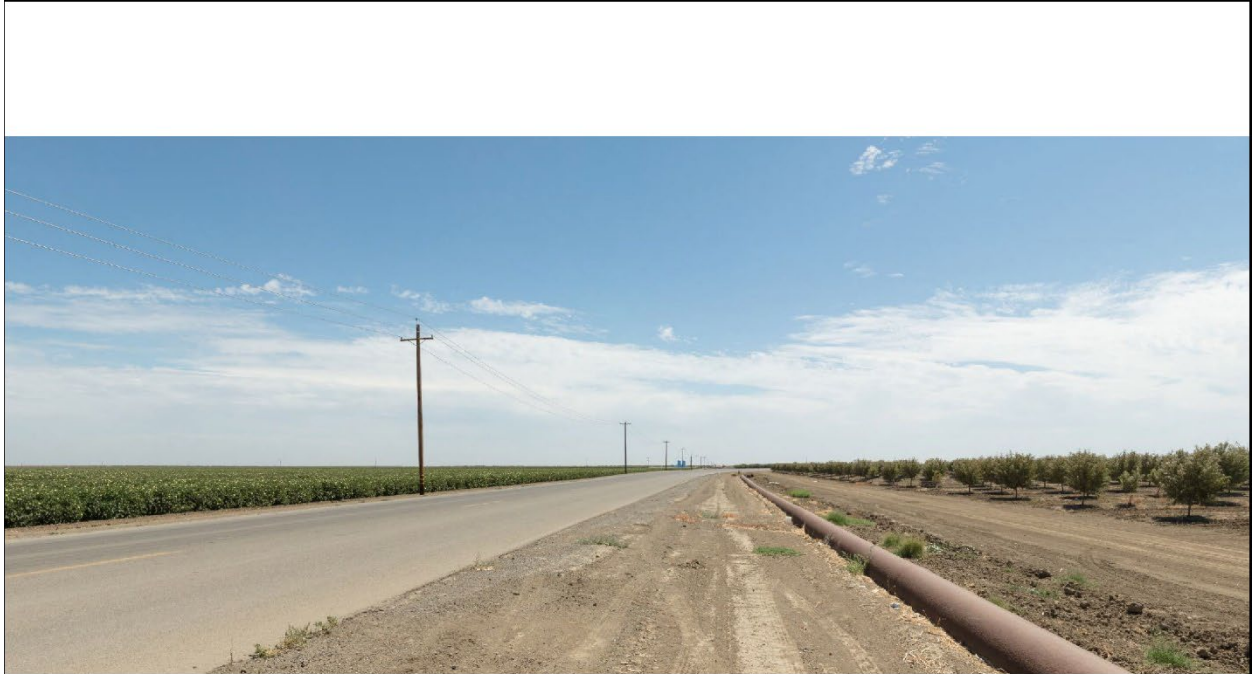


Figure 5.15-4
Key View 2 - Existing View

Sources: RCI 2024oo

Key View 2 Located along West Harlan Ave looking east. This location is representative of local motorist views along West Harlan Avenue. Existing distribution lines mounted on a series of wooden poles are sky lined and follow West Harlan Avenue. The landscape is characterized by access roads for the established orchard, a large drainage ditch with pipe running adjacent to the roadway and an established field crop opposite the orchard. Intermittent tufts of weeds and dried grasses are present along the roadside.



Figure 5.15-5
Key View 3 - Existing View

Sources: RCI 202400

Key View 3 Located from West Mt. Whitney Avenue looking northeast. This location is representative of local motorist and residences views along Mt. Whitney Avenue. An existing distribution line mounted on wooden poles follows an unpaved access road and are sky lined across the left half of the image. Red, white, and brown agricultural equipment and vehicles are visible in the middle-ground with an orchard in the background. The landscape is flat, exposed earth covers a majority of the foreground with scattered patches of rusty brown and green weeds. In the distance green swaths of row crops are visible with dried grasses and green shrubs beyond the row crops.



Figure 5.15-6
Key View 4 - Existing View

Sources: RCI 2024nn

Key View 4 Located at the intersection of South Yuba Avenue and West Kamm Avenue looking southwest. This location is representative of local motorist views at this intersection of the unpaved roads. An existing distribution line mounted on wooden poles follows West Kamm Avenue, running east-west. A concrete drainage culvert and gravel side road parallel West Kamm Avenue, offset approximately 30 and 60 feet south. The landscape is flat and is characterized by patches of small, grey-green weeds and dried grasses. On the distant horizon, faint outlines of distant orchards and tree lines are visible. In the background, the Big Blue Hills and Monocline Ridge are faintly visible through the haze.

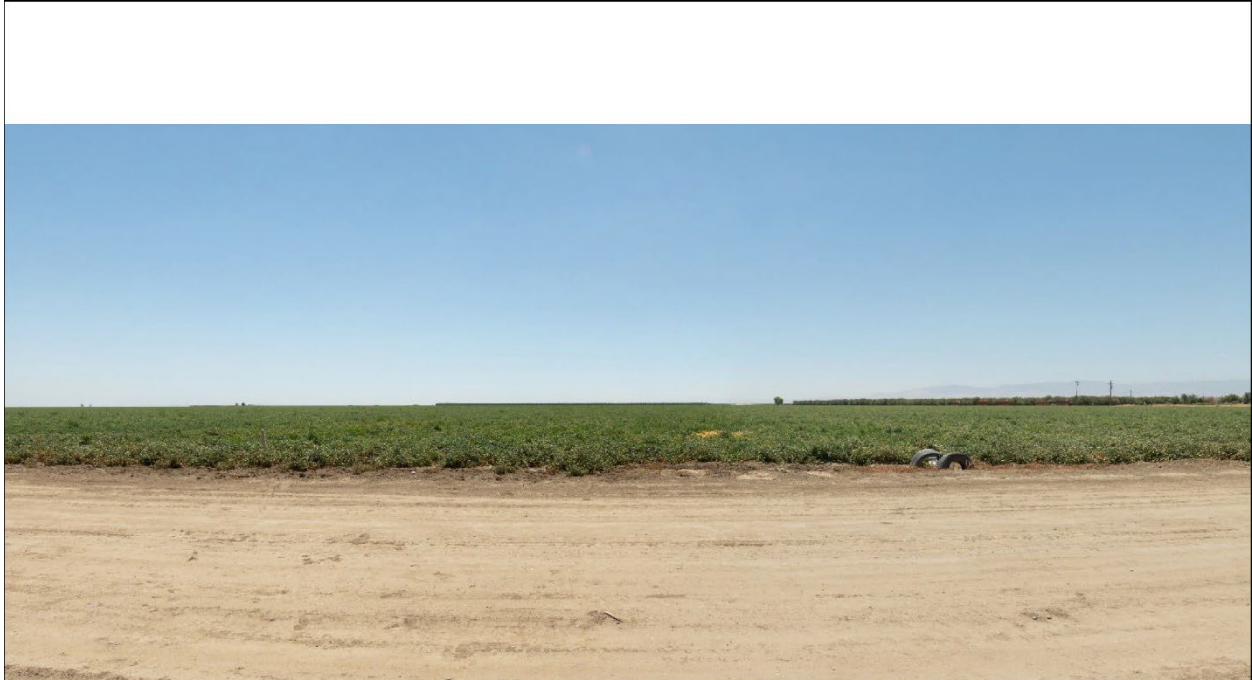


Figure 5.15-7
Key View 5 - Existing View

Sources: RCI 2024nn

Key View 5 This view looks south along West Kamm Avenue. This view is representative from the residence views of the project. Views are looking south toward the project. The landscape is flat and is characterized by dense green row crops. In the distance, an orchard is visible, and scattered trees and the existing utility lines are faintly dotted across the horizon.



Figure 5.15-8
Key View 6 - Existing View

Sources: RCI 2024nn

Key View 6 looks south and is representative of views from a cluster of residences located near West Cerini Avenue. An existing distribution line mounted on wooden poles can be seen in the distance across the flat tilled agricultural land. Rows of large shrubs and trees screen the residences from the street. In the distance on the right side of the image, dark green scattered trees are visible, and light-colored buildings are visible across the horizon. The landscape is flat and is characterized by fields with exposed tan earth. A distant orchard is visible as a dark green horizontal feature adjacent to the residence.

Visual Resources and Resource Change

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed project. Resource change is one of the two major variables in the equation that determine visual impacts. The other is viewer response, discussed under the next section Viewers and Viewer Response.

Visual Resources

Visual resources of the project setting are defined and identified below by assessing visual character and visual quality in the project corridor.

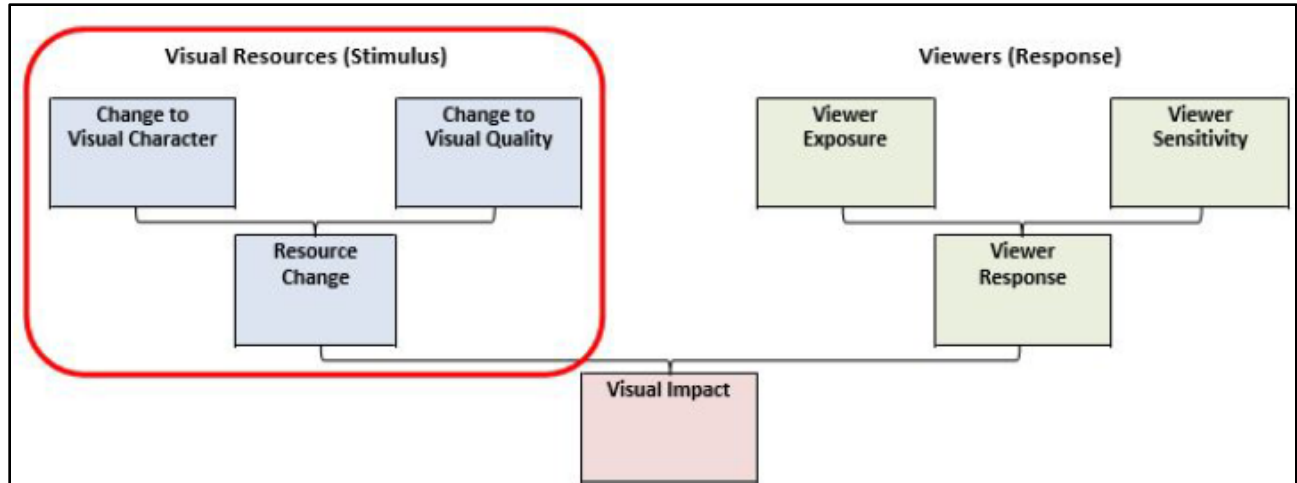


Table 1 - Standard for Rating Visual Character



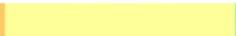
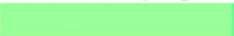

		Low	Moderately Low	Moderate	Moderately High	High
						
		≤ 1.4	> 2.0	> 2.6	> 3.2	≥ 3.3
		<div><div>Incompatible</div><div>Compatible</div></div>				
Pattern Elements						
Form	Symmetrical/Geometric					Asymmetrical/Complex
Line	Rectangular/Rigid					Curvilinear/Fluid
Color	Grays/Monotones					Greens/Earth tones
Texture	Hard/Smooth					Soft/Irregular
Pattern Character						
Scale	Over Sized/Monumental					Appropriately Scaled
Diversity	Monolithic/Homogeneous					Articulated/Complex
Continuity	Dissonant/Contrasting					Harmonious/Consistent
Dominance	Prominent/Unbalanced					Balanced/Open

Table 2 – Standard Scoring for Visual Character

Change to Visual Character	
Average Composite Change	Assigned Level
≥ 3.3	High
>2.6	Moderately High
>2.0	Moderate
>1.5	Moderately Low
≤ 1.4	Low

Visual Character

Visual character includes attributes termed as pattern elements and pattern character. Pattern elements are the primary visual attributes of objects, which include form, line, color, and texture. Pattern character is the contrast between pattern elements and the surrounding visual environment. Pattern characters include the attributes of dominance, scale, diversity, and continuity. Together pattern elements and pattern character are used to describe the visual environment, not to evaluate. These attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with a viewer's response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using a visual character attribute as indicators. For this project, the following attributes were considered:

Pattern elements:

- Form – visual mass, bulk, or shape
- Line – edges or linear definition
- Color – reflective brightness (light, dark) and hue (red, green)
- Texture – surface coarseness

Pattern character:

- Dominance – position, size, or contrast
- Scale – apparent size as it relates to the surroundings
- Diversity – a variety of visual patterns
- Continuity – uninterrupted flow from form, line, color, or textural pattern

The change likely to be caused by the project is assessed according to the visual attributes of objects (Pattern Elements) and the relationships between those objects (Pattern Character) in the visual environment before and after the project is constructed. A six-point scale for visual character consisting of a rating system from -3 (indicating incompatibility) to +3 (indicating compatibility) is used to reflect compatibility of project features after construction (see **Table 1** and **Table 2**). The amount of change (absolute value) between the existing and proposed visual environment at each key view is determined, then the degree of change is assigned a value that ranges from low to high.

Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes also validate the assessed level of visual quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur

because of the project. The three criteria for evaluating visual quality are defined below:

- Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

Existing and proposed vividness, intactness, and unity are scored from one to five (five being the highest). The amount of change in quality between existing and proposed viewshed for each category is determined (with five units of change possible), then the overall level of change to visual quality is assigned a value that ranges from low to high (see **Table 3** and **Table 4** – Standard for Rating Visual Quality and Standard Scoring for Visual Quality)

Table 3 - Standard for Rating Visual Quality					
	Low	Moderately Low	Moderate	Moderately High	High
	≤ 1.4	>1.5	> 2.0	> 2.6	> 3.3
Vividness	Not Memorable			Strikingly Memorable	
Intactness	Much Encroachment/Degradation			Little or No Encroachment or Degradation	
Unity	Little of Poor Integration			Superlative Integration	

Table 4 - Standard Scoring for Visual Quality	
Change to Visual Quality	
Average Change	Assigned Level
≥ 3.3	High
> 2.6	Moderately High
> 2.0	Moderate
> 1.5	Moderately Low
≤ 1.4	Low

Resource Change

The resulting level of resource change is determined by taking a composite average of change in visual character and change in visual quality. Resource change is rated in terms of low to high (see **Table 5** – Standard Matrix for Determining Resource Change). Described resource change and ratings are shown in the Section Visual Impacts, by Key View Locations.

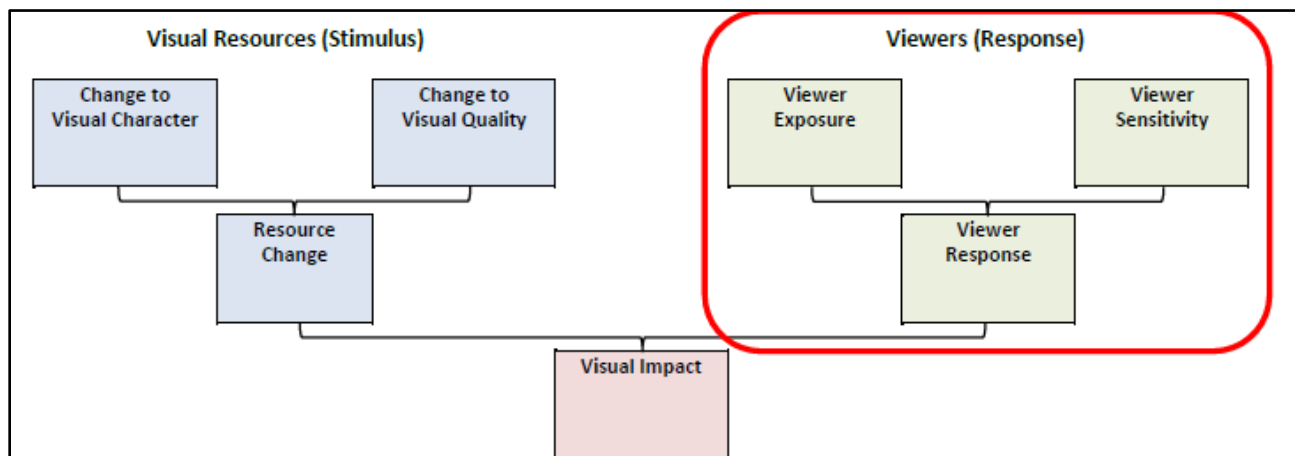
Table 5 - Standard Matrix for Determining Resource Change

Resource Change				Visual Character Level of Change				
				Low	Moderately Low	Moderate	Moderately High	High
				(L)	(ML)	(M)	(MH)	(H)
				L	ML	M	MH	H
Visual Quality Level of Change	Low		L	L	ML	ML	M	M
	Moderately Low		ML	ML	ML	M	M	MH
	Moderate		M	ML	M	M	MH	MH
	Moderately High		MH	M	M	MH	MH	H
	High		H	M	MH	MH	H	H

Viewers and Viewer Response

The population affected by the project is composed of viewers. Viewers are people whose views of the landscape may be altered by the proposed project – either because the landscape itself has changed, or their perception of the landscape has changed.

Viewers, or more specifically the response viewers have to changes in their visual environment, are one of two variables that determine the extent of visual impacts that would be caused by the construction and operation of the proposed project. The other variable is the change to visual resources discussed earlier in the Section Visual Resources and Resource Change. Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions, viewer exposure and viewer sensitivity.



Types of Viewers

There are two major types of viewer groups. Those viewers to the project site and those viewers from the project site. Each viewer group has their own level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group which help to predict their responses to visual changes.

Viewers to the Project Site

These are people who have views directly to the project site. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate this view group with distinct reasons for being in the corridor and therefore having distinct responses to changes in visual resources.

Viewers from the Project Site

These are people who have views away from the project site. They can be subdivided into different viewer groups in two different ways – by mode of travel or by reason for travel. For example, subdividing users by mode of travel may yield pedestrians, recreationalists (e.g., bicyclists, etc.), transit riders, car drivers, passengers, and truck drivers. Dividing users or viewer groups by reason for travel creates categories like tourists, commuters, and haulers.

Viewer Response

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions as previously mentioned, viewer exposure (see **Table 6** – Standard for Rating Viewer Exposure) and viewer sensitivity (see **Table 7** – Standard for Rating Viewer Sensitivity).

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. It has three attributes:

- Location relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure.
- Quantity refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers.
- Duration refers to how long a viewer can keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

For example, a driver driving down the road or highway at high rate of speed will be exposed to a view for only a limited amount of time or short duration. Conversely, a resident living along that same road or highway near the project site, will have a constant exposure or long duration to that same view. Viewer exposure attempts to take both perspectives into consideration.

Table 6 - Standard for Rating Viewer Exposure						
		Low	Moderately Low	Moderate	Moderately High	High
		≤ 1.4	> 1.5	> 2.0	> 2.6	≥ 3.3
Location	Distant Views				Foreground Views	
Quantity	<250 per day				12,500 per day	
Duration	<1 minute per day				>4 hours per day	

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes:

- Activity relates to the preoccupation of viewers – are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings? The more they are actually observing their surroundings; the more sensitivity viewers will have of changes to visual resources.
- Awareness relates to the focus of view – the focus is wide and the view general or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change.
- Local values and attitude also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have high concern for any visual change.

Table 7 - Standard for Rating Viewer Sensitivity					
	Low	Moderately Low	Moderate	Moderately High	High
	≤ 1.4	> 1.5	> 2.0	> 2.6	≥ 3.3
Activity	Attention away from view			Attention focused on view	
Awareness	Low Awareness			High Awareness	
Local Values	Low expectations/unprotected			High expectations/protected	

Group Viewer Response

The viewer response at each key view or each individual project location is analyzed and the narrative description of viewer exposure and viewer sensitivity for each viewer group are averaged to establish the overall composite group viewer response rating (see **Table 8**).

Table 8 – Standard Scoring for Viewer Response	
Viewer Response	
Averaged Composite Response	Assigned Level of Response
4.5-5.0	High
3.5-4.4	Moderately High
2.5-3.4	Moderate
1.5-2.4	Moderately Low
0-1.4	Low

Threshold of Significance for Visual Impact

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations are also considered. A generalized visual impact assessment process is illustrated in the following diagram. **Table 9** provides a reference for determining levels of visual impact by combining composite resource change and composite viewer response.

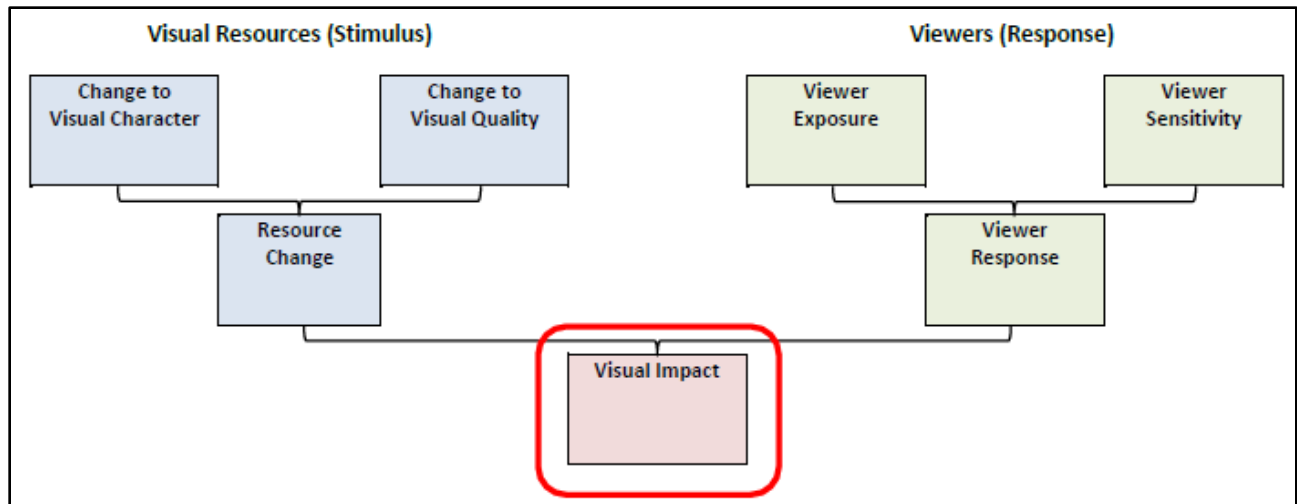


Table 9 - Standard Matrix for Determining Visual Impacts

Visual Impact Ratings Using Viewer Response and Resource Change							
			Viewer Response (VR)				
			Low (L)	Moderately Low (ML)	Moderate (M)	Moderately High (MH)	High (H)
			L	ML	M	MH	H
Resource Change (RC)	Low	L	L	ML	ML	M	M
	Moderately Low	ML	ML	ML	M	M	MH
	Moderate	M	ML	M	M	MH	MH
	Moderately High	MH	M	M	MH	MH	H
	High	H	M	MH	MH	H	H

Definition of Visual Impact Levels

- High (H) = ≥ 3.3 : A high level of negative change to the resource or a high level of viewer response to visual change such that extraordinary architectural design and landscape treatment may not mitigate the impacts below a high level. An alternative project design may be required to avoid high negative impacts.
- Moderately High (MH) = 2.7 to 3.2: Moderate negative visual resource change with high viewer response or high negative visual resource change with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will take longer than five years to mitigate.
- Moderate (M) = 2.1 to 2.6: Moderate negative change to the visual resource with moderate viewer response. Impact can be mitigated within five years using conventional practices.
- Moderately Low (ML) = 1.5 to 2.0: Low negative change to the visual resource with a moderate viewer response, or moderate negative change to the resource with a low viewer response. Impact can be mitigated using conventional practices.
- Low (L) = ≤ 1.4 : Low negative change to existing visual resources, and low viewer response to that change. May or may not require mitigation.

Visual Impacts Analysis by Key Views

Because it is not feasible to analyze all the views in which the project would be seen, it is necessary to select a number of key views or individual project locations associated with visual assessment units that would most clearly demonstrate the level of change to visual resources caused by project implementation. Key views also represent the viewer groups that have the highest potential to be affected by proposed project location.

Key View 1



Figure 5.15-9
Key View 1 - Location

Sources: RCI 202400



Figure 5.15-10
Key View 1 - Existing View

Sources: RCI 202400

Location – Key View 1. Existing view from the I-5 southbound offramp at South Derrick Avenue representing the motorist’s viewpoint. Views are looking southwest where the proposed utility switchyard would traverse the view in the distance and the gen-tie lines would cross over the freeway and into view toward the utility switchyard. I-5 is a locally designated scenic highway. (See **Figure 5.15-9.**)

Existing Visual Character/Quality. The visual character is defined as flat landform of open land with some built manufactured elements adjacent to the existing roadway. The asphalt surface of South Derrick Avenue is a striped two-lane road. There are existing vertical features in the foreground view that includes overhead lighting structures, utility poles, freeway signs, and white and yellow reflector stakes. Dry vegetation can be found in the foreground and middle ground views that are continuous with scattered shrubs dotting the roadside. Mature orchards as present as a grey-green horizontal cluster on the left side of the view. A commercial building in the distance appears as a solid, white block on the right side of the view with intermittent trees as well as a row of palm trees between the roadway and the building. In the background, the Big Blue Hills are visible through the haze in the southwest. Pattern elements and character rank moderate. Conversely, diversity has a lower value for pattern character as scenes such as these are homogeneous and replicated throughout this region, lacking distinct visual change. Visual quality ranks moderately low for vividness, intactness and unity as the viewshed has some visual vertical elements that scatter the open view. (See **Figure 5.15-10.**)



Figure 5.15-11
Key View 1 - Proposed Overlay View

Sources: RCI 202400



Figure 5.15-12
Key View 1 - Proposed View

Sources: RCI 202400

Change to Visual Character/Quality. Project elements are anticipated to have moderate level for visual impact or change to existing visual resources since views are expected to be only slightly degraded. The added utility lines are visible in the background as well as traversing I-5 freeway. The additional project features on the right create additional form and lines in the middle ground of the motorists. The proposed gen-tie would be strung across galvanized steel structures at least 120 feet tall with a maximum height of 200 feet. The proposed gen-tie appears as tall, grey steel structures with horizontal lines strung in between. The structures and utility lines would be most visible for the drivers along I-5 with its flat open views. There are no simulations produced for locations directly on I-5 and the motorists viewpoint. The proposed project features slightly obstruct the open vistas of the Big Blue Hills in the distance. (See **Figures 5.15-11** and **5.15-12.**)

Viewer Response. The viewers at this location are the motorists along the I-5 corridor and South Derrick Avenue. Viewer location rates moderate. There are already existing utility poles in the middle ground. The gen tie line and its structures would directly cross overhead on I-5 and would be in immediate driver view from varying distances causing the viewer response to be rated moderate rather than low. However, viewer duration is rated moderate as viewers move quickly through the project site at a high rate of speed for a limited time. The average viewer response rating would be moderate exposure to the visual changes in the project area.

Key View 2



Figure 5.15-13
Key View 2 - Location

Sources: RCI 2024oo

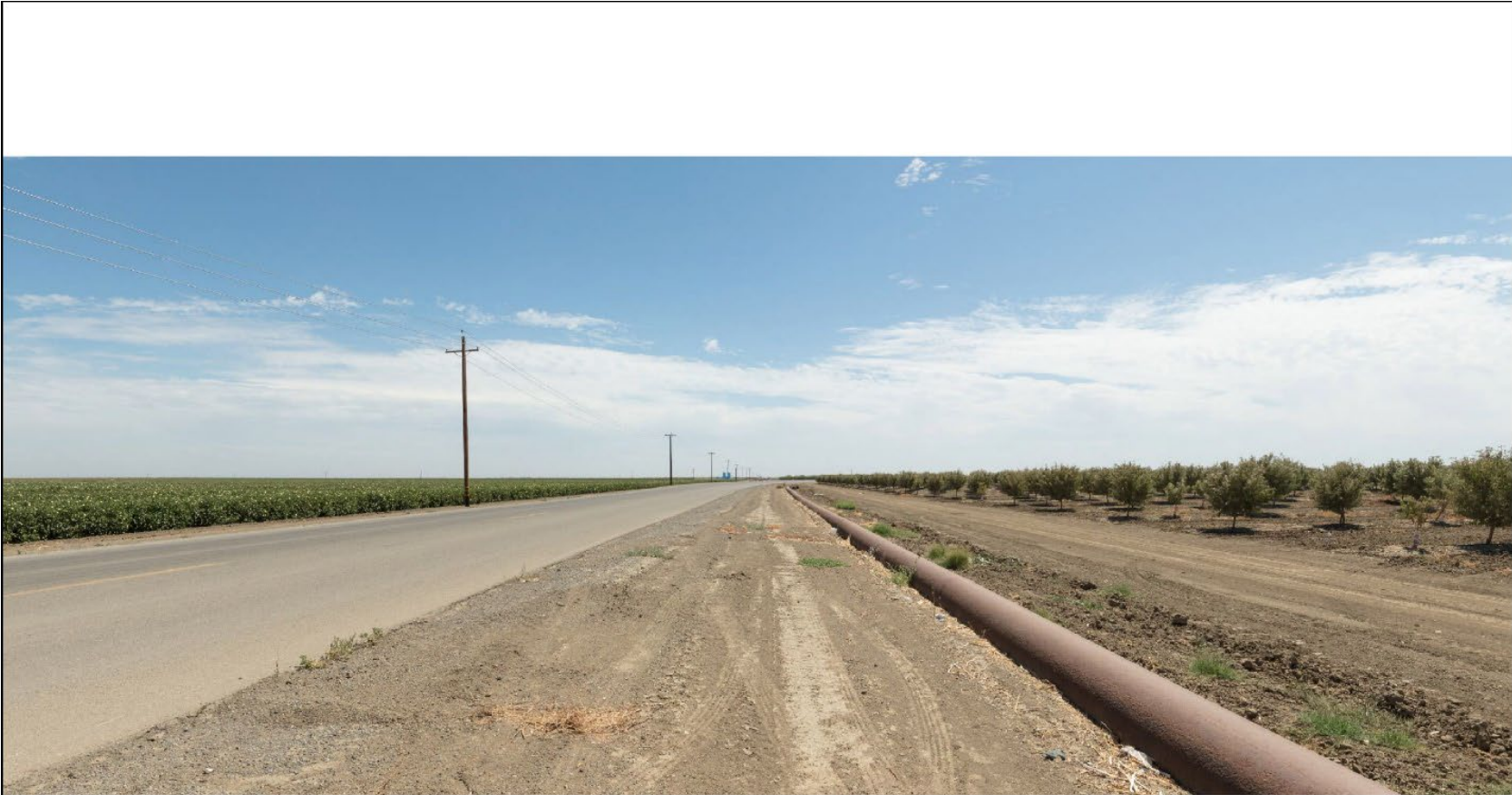


Figure 5.15-14
Key View 2 - Existing View

Sources: RCI 202400

Location – Key View 2. Existing view on West Harlan Avenue representing the motorist's viewpoint. Views are looking east toward the proposed gen-tie line that would run parallel with the road and the existing utility lines as well as the solar facility in the far distance. (See **Figure 5.15-13.**)

Existing Visual Character/Quality. The visual character is defined as flat agricultural landform with existing utility lines running parallel to the road on one side and an irrigation mainline on the other side. Existing crops of cultivated row crops and medium-sized orchard trees. West Harlan Avenue traverses between the agricultural parcels. A cluster of blue agricultural equipment is visible in the distance. Pattern elements and character are moderately low while visual quality is at a moderate level. (See **Figure 5.15-14.**)

Proposed Project Features. The project would install a gen-tie line parallel to the existing distribution lines and existing road. The proposed gen-tie structures are taller than the existing distribution lines along West Harlan Avenue.

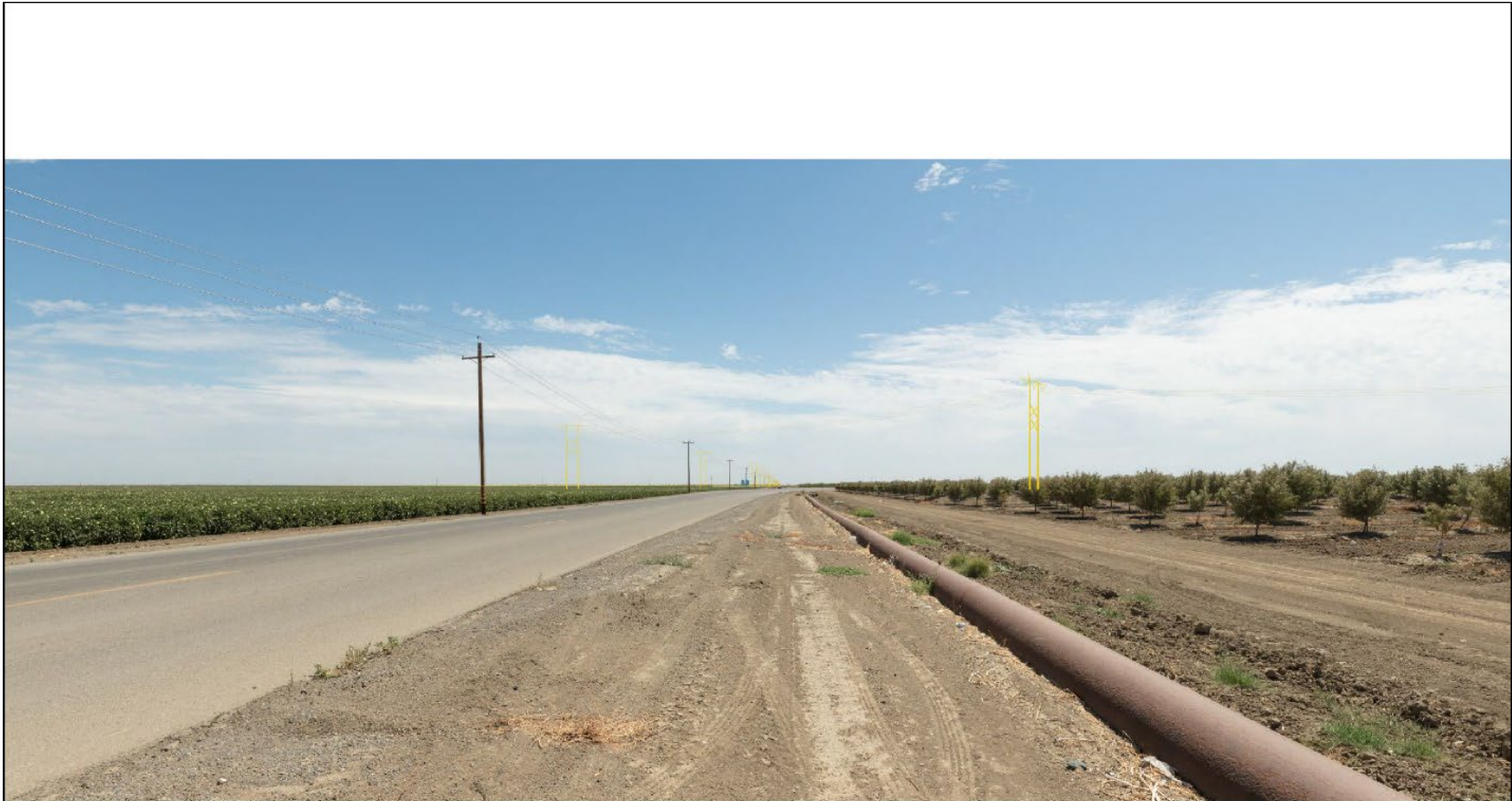


Figure 5.15-15
Key View 2 - Proposed Overlay

Sources: RCI 2024oo

Change to Visual Character/Quality. Project elements are anticipated to have moderately low levels for visual impact or change to existing visual resources since views are expected to remain relatively the same or only slightly degraded. The gen-tie line creates additional form and lines in the foreground, middle ground and background views. Changes to visual quality of vividness, intactness, and unity for the proposed gen-tie would also be moderately low as the amount of change in quality does not change much. (See **Figure 5.15-15.**)

Viewer Response. The viewers at this location are the local users of West Harlan Avenue. Viewer location rates moderate as there are already existing utility poles in the foreground, middle ground and background. However, viewer duration is rated moderately as viewers move quickly through the project site, yet the get-tie line follows the road and the viewer. The average viewer response rating is moderate for the same reason. Other viewers are the agricultural workers who have a longer viewer exposure causing a moderate level of viewer sensitivity. However, due to the existing distribution lines the additional taller gen-tie lines would not cause any negative response to the change in view.

Key View 3

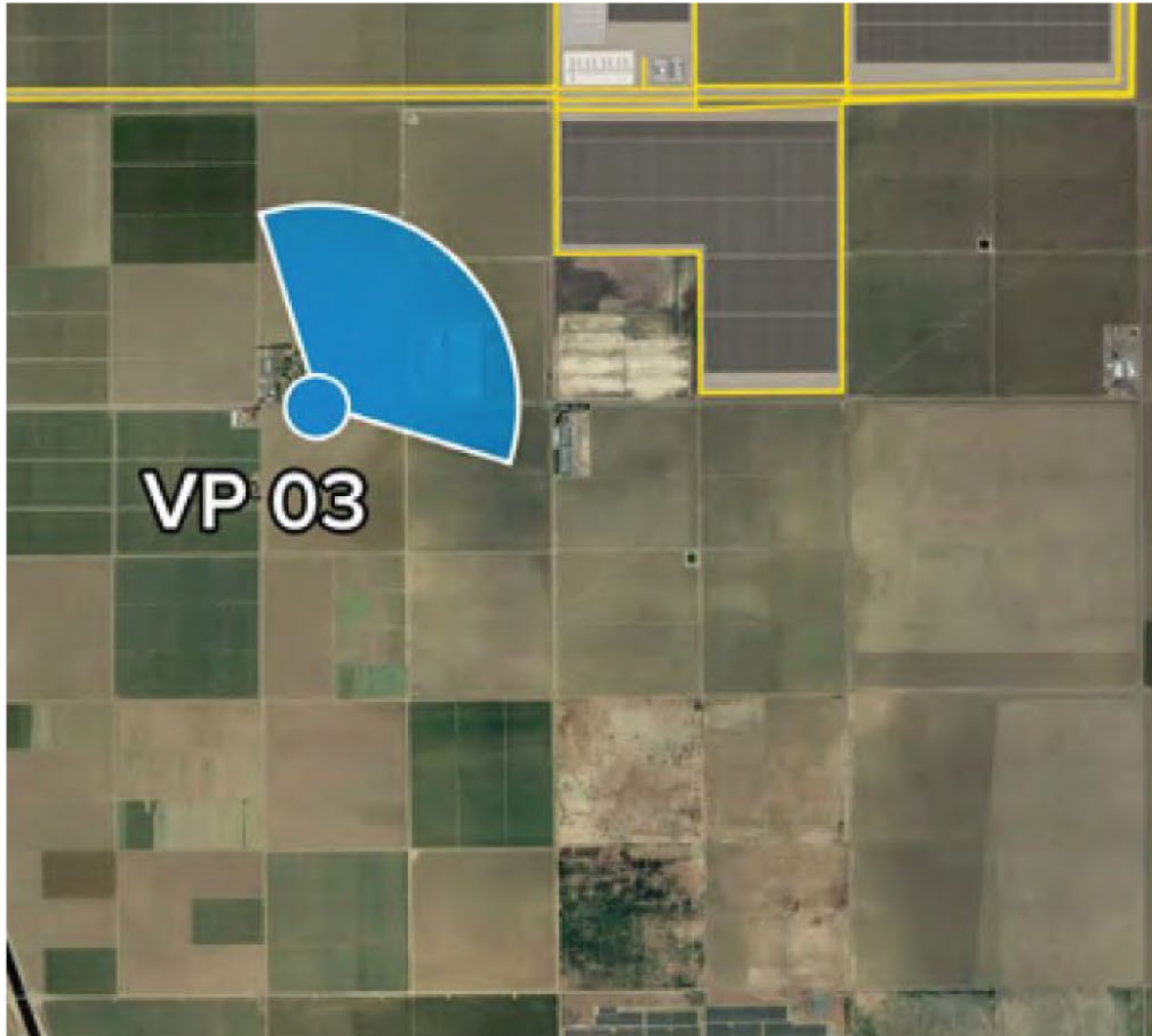


Figure 5.15-16
Key View 3 - Location

Sources: RCI 202400



Figure 5.15-17
Key View 3 - Existing View

Sources: RCI 2024oo

Location – Key View 3. Located from West Mt. Whitney Avenue looking northeast. This location is representative of local motorist and residences views along Mt. Whitney Avenue. This view represents the nearby residents who are located approximately 260 feet northwest of this view along South Amador Avenue, and another residence located along West Mount Whitney Avenue approximately 0.65 miles from the proposed solar facility. Views are looking northeast toward the project. (See **Figure 5.15-16.**)

Existing Visual Character/Quality. The visual character is defined as flat agricultural landform with existing agricultural staging area and compacted dirt in the middle ground. A field of row crops and orchards are seen in the distance. Nearby residences are seen in the distance on the right side mostly hidden by large trees. Faint silhouettes of utility structures are distantly visible through the haze and dust. Pattern elements, character and visual quality are moderately low. (See **Figure 5.15-17.**)

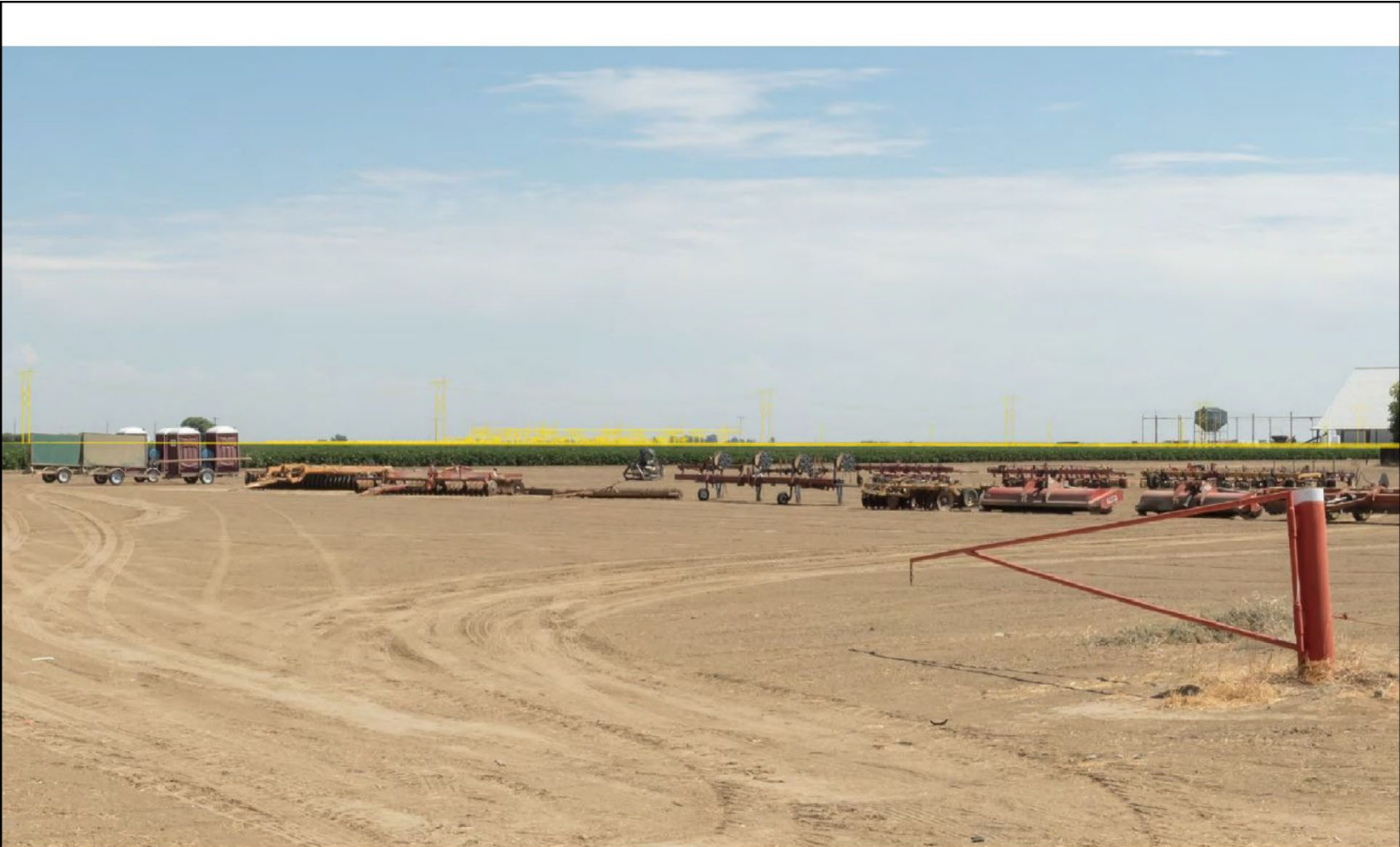


Figure 5.15-18
Key View 3 - Proposed Overlay

Sources: RCI 2024nn

Proposed Project Features. The project proposes to install a gen-tie utility structures in the distance which is visible due to their height. The BESS and step-up substation are visible on the left yet still in the distance presenting as a series of clusters of grey horizontal and vertical lines. The proposed solar array is present approximately three miles away but is not visible in view.

Change to Visual Character/Quality. Project elements are anticipated to have moderately low levels for visual impact or change to existing visual resources since views are expected to remain relatively the same or only slightly degraded due to the staging equipment located in the foreground. The gen-tie line is barely visible in the hazy background as lines in the distance. The project elements would clutter the view in the distance and cause the visual character to be slightly impacted. Changes to visual quality at this location is moderate as it is in the distance and not the foreground like the staging equipment. (See **Figure 5.15-18.**)

Viewer Response. The viewers at this location are the residence and agricultural workers with direct visual access to the gen-tie lines, BESS, step-up substation in the far distance. Viewer location rates moderate as there are already existing built items in the foreground, middle ground and background. However, viewer duration is moderately high as viewers are not moving quickly through the project site. The average viewer response rating is moderately high for the same reason. However, since the project is seen in the distance the response to the change in view is moderately low.

Key View 4

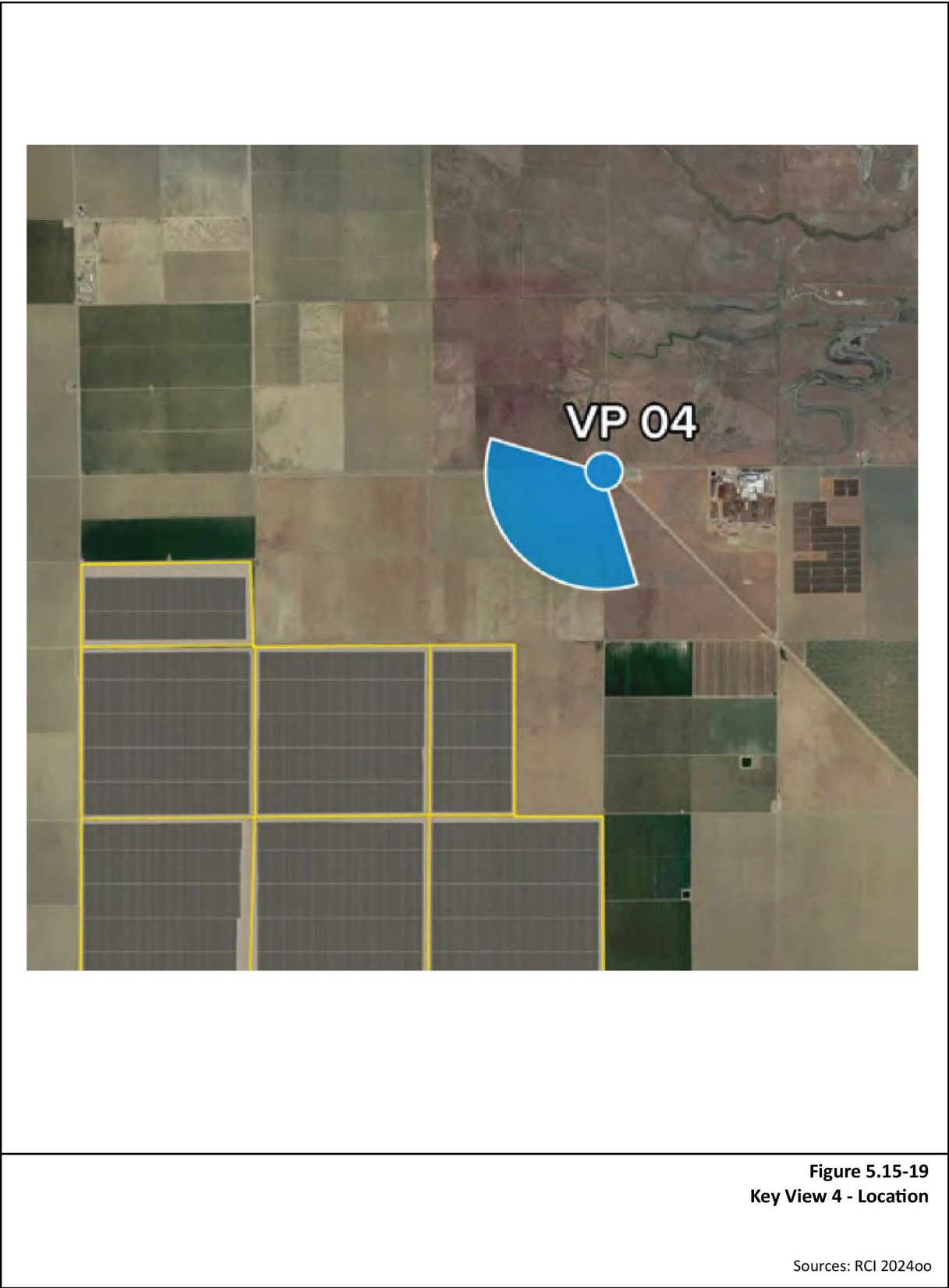


Figure 5.15-19
Key View 4 - Location

Sources: RCI 2024oo



Figure 5.15-20
Key View 4 - Existing View

Sources: RCI 2024nn

Location – Key View 4. Existing views are located at the intersection of South Yuba Avenue and West Kamm Avenue and nearby access roads. This view is representative from the motorist views of the project. Views are looking southwest toward the project. (See **Figure 5.15-19.**)

Existing Visual Character/Quality. The visual character is defined as flat agricultural landform. Foreground views of earthen roadways intersecting with a guardrail, drainage ditch and signpost in the middle ground. In the background bare parcels with little vegetation can be seen and in the far distance trees are faintly visible along with the Big Blue Hills to provide some contrast to the stark flat agricultural land. Pattern elements, character and visual quality are moderately low. (See **Figure 5.15-20.**)



Figure 5.15-21
Key View 4 - Proposed Overlay

Sources: RCI 2024nn

Proposed Project Features. The project location 4 proposes to install a solar facility, gen tie, BESS, and step-up substation in the far distance of the horizon about two miles away. The structures can be seen as white clusters in the distance and the gen-tie looks like a faint series of evenly spaced vertical lines.

Change to Visual Character/Quality. The project does not change the condition of the foreground or middle ground as the proposed solar facility, BESS, operations and maintenance (O&M) facility, and step-up substation are approximately two miles away. In the distance on the right side above the existing guardrail, the proposed solar facility, BESS, O&M facility, and step-up substation are dotted clusters of white structures in the distance among the atmospheric haze. The white clusters contrast against the neutral tones of the agricultural fields and masses of grey green orchards in the distance. The proposed solar facility can be seen as a dark line just below the horizon. The proposed solar array blends in with the existing orchards in the distance. Changes to the visual character/quality at this location is moderately low due to the distance of the project features. (See **Figure 5.15-21.**)

Viewer Response. The viewers at this location are the motorists along South Yuba Avenue, West Kamm Avenue and nearby access roads. Viewer location rates low as the project is in the distance. Viewer duration is moderately low as viewers will faintly see the buildings in the distance as they are driving along these roads. Also, since the project is seen in the distance, the response to the change in view is moderately low.

Key View 5

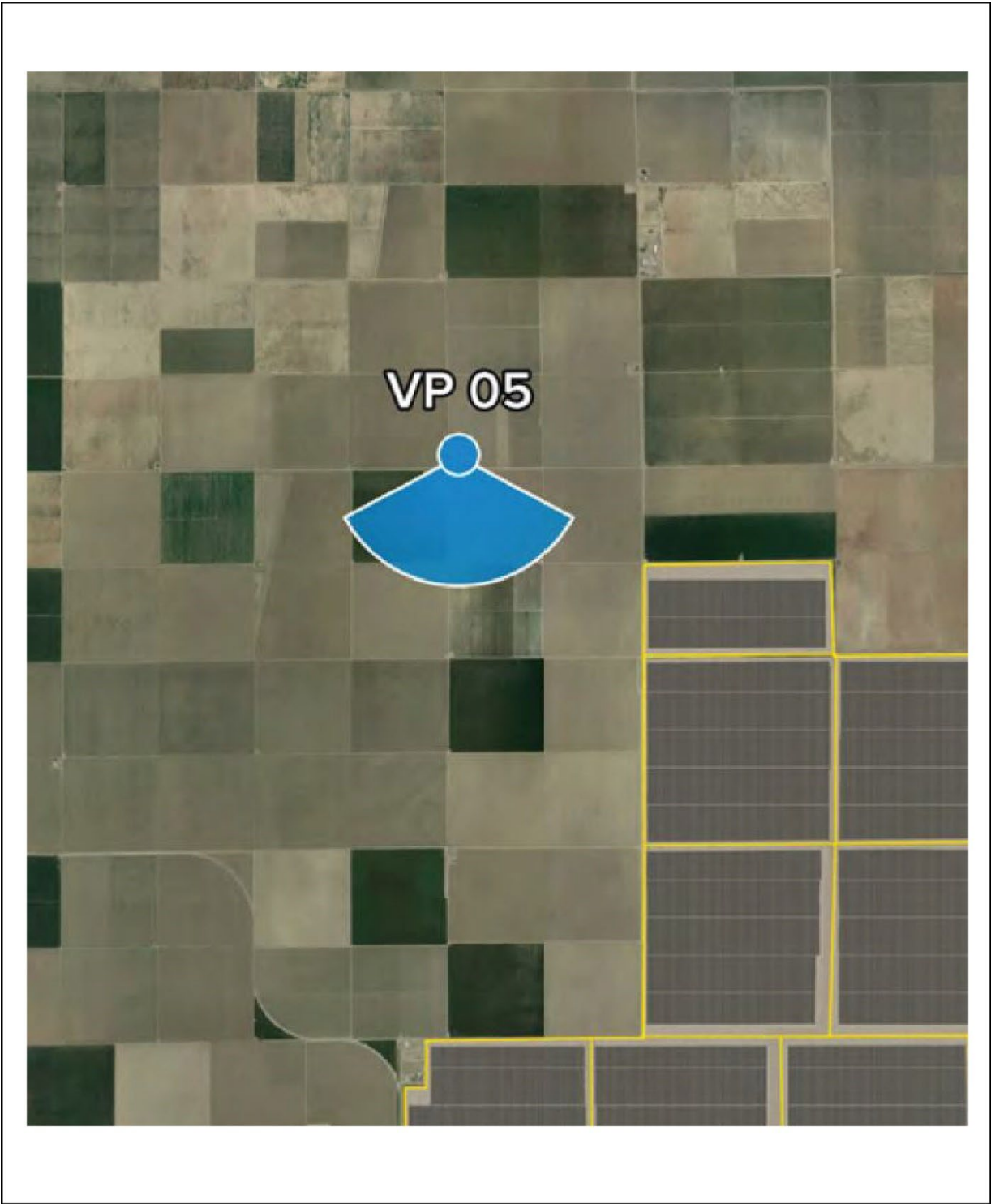


Figure 5.15-22
Key View 5 - Location

Sources: RCI 2024oo



Figure 5.15-23
Key View 5 - Existing View

Sources: RCI 2024nn

Location – Key View 5. Existing view toward the project from West Kamm Avenue. This view is representative from the residence views of the project. Views are looking south toward the project. (See **Figure 5.15-22.**)

Existing Visual Character/Quality. The existing visual character is flat agricultural row crops. Foreground views are of existing growing row crops seen out to the distance. The background to the right indicated by a tree marks the corner of West Stroud Avenue and South Sonoma Avenue. In the center of the view a dark green line above the row crops, a line of orchard trees is seen as dark green. The silhouette of the Big Blue Hills is indistinguishable through the atmospheric haze. Pattern elements, character and visual quality are moderate in this location. (See **Figure 5.15-23.**)



Figure 5.15-24
Key View 5 - Proposed Overlay

Sources: RCI 2024nn

Proposed Project Features. The proposed solar facility is irregular in shape and is located 1.15 miles to the southeast and 2.8 miles to the south of the existing residence.

Change to Visual Character/Quality. The project does not change the condition of the visual character or quality as the proposed solar facility is not in view at this location. (See **Figure 5.15-24.**)

Viewer Response. The viewers at this location are the residence from West Kamm Avenue. However, they are located approximately 800 feet to the west of this view. The proposed solar facility is over a mile away. Viewer awareness and exposure is moderately high due to the proximity to the project. Viewer location rates low as the project is in the distance and unseen at this location. However, since the project is seen in the distance, the response to the change in view is moderately low.

Key View 6





Figure 5.15-26
Key View 6 - Existing View

Sources: RCI 2024nn

Location – Key View 6. Existing view from West Cerini Avenue. This view is representative of residential views of the project. Views are looking south toward the project. (See **Figure 5.15-25.**)

Existing Visual Character/Quality. The existing visual character is flat tilled soil with an existing access road cutting between the field seen from the foreground to the distance background views. The compacted access road separates the tilled earth from the residential and active agricultural fields. In the immediate view on the left is a large tree. Also, on the left side in the foreground and background, there are orchard trees that disappear into the distance. On the right beyond the tilled agricultural land dotted trees are seen in the distance and through the atmospheric haze, a faint silhouette of the Gujarral Hills is seen. Pattern elements and character are moderately low as scenes such as these are homogeneous and replicated throughout this region, lacking distinct visual change. Visual quality ranks moderately low for vividness, intactness and unity as the viewshed has little to add. (See **Figure 5.15-26.**)



Figure 5.15-27
Key View 6 - Proposed Overlay

Sources: RCI 2024nn

Proposed Project Features. The proposed solar facility is located approximately 0.3 miles from the local residences and the gen tie line crosses through this field.

Change to Visual Character/Quality. Project elements are anticipated to have moderate levels for visual impact or change to existing visual resources since views would be modified and slightly degraded. The gen-tie line and solar facility are now visible in the middle ground in the center of the view. The gen-tie line appears as tall, regularly spaced steel structures contrasting against the sky. The solar facility appears as a cluster of grey vertical and angular lines of varying heights in the distance. Changes to visual quality of vividness, intactness, and unity for the proposed gen-tie and solar array would be moderate as the amount of change in quality is evident. The project structures are visible throughout the view and the white and steel finishes reduces the unity of the agricultural fields. (See **Figure 5.15-27.**)

Viewer Response. The viewers at this location are the residents along West Cerini Avenue. Viewer locations are moderate to moderately high as the visual clutter of the proposed project is seen along the horizon. Viewer duration is also high as they have a longer view exposure than a motorist. The change in view is moderate as the flat agricultural land contrasts with the project elements.

5.15.2.2 Direct and Indirect Impacts

a. Would the project have a substantial adverse effect on a scenic vista?

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, the project would have a less than significant impact on scenic vistas.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

For this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. There are no officially designated state or local vistas in the project area. The Fresno County General Plan (Policy OS-L.1) identifies I-5 as a designated scenic highway within the County (Fresno County 2024). Thus, the expansive agricultural and mountain features along I-5 would function as scenic vistas along a scenic highway throughout the project vicinity. The Fresno County General Plan (Policy OS-K.1) encourages the preservation of scenic views and vistas, encourages development to incorporate natural features of the site into the development, and requires overhead utilities adjacent to scenic roadways to be developed and installed underground to minimize impacts to scenic quality (Policy OS-K.4 and Policy OS-L.3).

Construction of the proposed battery energy storage system, step-up substations, solar facility, and O&M facility would not be visible from I-5 due to distance and intervening

features such as topography, structures, and/or vegetation. Construction would be temporary, and views of these construction activities would be of short duration. Therefore, construction of these project components would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

The gen-tie line is proposed with a perpendicular crossing at I-5 and the line does not run adjacent to the interstate. Portions of the gen-tie would be visible from I-5. Construction would be temporary, and views of these construction activities would be of short duration at highway speed. Therefore, construction of this project component would not adversely affect scenic vistas or damage scenic resources within a county designated scenic highway. Once installed the gen-tie would be most visible as support towers on each side of I-5 and an overhead electrical line crossing I-5 and would have a longer duration of visibility from the motorist viewpoint as the flat agricultural lands and open views would cause a moderate visual impact.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of the PG&E utility switchyard, and downstream network upgrades would be visible from I-5. However, construction would be temporary, and views of these construction activities would be of short duration at highway speed. Once construction is complete the utility switchyard would not be visible. Therefore, construction and operation of the utility switchyard would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, the project would have a less than significant impact on scenic resources.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Construction activities and operations of the proposed battery energy storage system, step-up substations, solar facility, O&M facility and gen-tie line would not be visible from I-5 due to distance, nor would they intervene existing landform features such as topography, structures, and/or vegetation.

PG&E Utility Switchyard and Downstream Network Upgrades

Construction of portions of the PG&E utility switchyard gen-tie lines would be visible from I-5. However, construction would be temporary, and views of these construction activities would be of short duration at highway speed and would not adversely affect scenic vistas or damage scenic resources. The Cantua and Gates substations are surrounded by agricultural fields and would not damage scenic resources either during

construction or during operations. The fiber communication line has three alternatives that run parallel to I-5 and would be seen both during construction and operations. The height of the towers range between approximately 100-feet tall to 160-feet tall. However, there are existing transmission lines in the vicinity with which these fiber lines would share transmission line corridors. This would have a less than significant impact to any of the existing visual resources within the project area as the transmission lines already exist within the corridor.

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Construction— *Less Than Significant Impact*

Based on the analysis below, construction of the project would have a less than significant impact on existing visual character or quality of public views of the site and its surroundings.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The BESS component would be approximately thirty-two acres in size, located within the solar facility and adjacent to the step-up substation components. At the BESS location, construction activities would be visible to a small number of local motorists along less well-traveled roads, as well as few rural residences in the vicinity. However, the proposed solar facility surrounding the BESS locations would be nearing completion when construction of the BESS begins, and thus, would largely obscure activities during construction. Further, project construction activities would not permanently or substantially degrade the existing visual character of the landscape because all project construction impacts would be temporary and of short duration in any one area.

Construction of the project would require establishing a temporary 20-acre construction laydown yard for vehicles and equipment parking, as well as material storage. The construction laydown yard would be located within the solar facility and located at the step-up substation site. To varying degrees, activities at the construction laydown yard would be noticeable to a limited number of rural residents, as well as motorists along local roads.

While project construction activities would be visible for a period of 18 to 36 months, individual activities would be considerably shorter in duration at any one location. Most of the proposed solar facility, step-up substation and O&M facility construction activities would occur within rural areas lacking sensitive viewers, and areas that are not visible from publicly accessible vantage points. However, residents located in

immediate proximity (50 to 100 feet) of the proposed solar facility and motorists along local roads would have views of construction activities throughout the duration of the solar facility, step-up substation and O&M facility construction. Construction activities would be temporary, and construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews would not permanently or substantially degrade the existing visual character of the landscape.

Construction of the gen-tie line proximate to and crossing I-5 would be visible to motorists on the interstate and motorists along local roads. As the proposed gen-tie line is constructed, following West Harlan Avenue and crossing over the roadway, motorists along West Harlan Avenue and nearby local roads would have views of construction activities. Additionally, gen-tie line construction would be visible to scattered rural residents such as those along Mt. Whitney Avenue. Project construction activities would not permanently or substantially degrade the existing visual character of the landscape because project construction impacts would be temporary and of short duration in any one area as construction occurs along the gen-tie line.

PG&E Utility Switchyard and Downstream Network Upgrades

The utility switchyard would be located west of I-5. Utility switchyard construction activities would be visible to motorists traveling along South Derrick Avenue and I-5. However, project construction activities would not permanently or substantially degrade the existing visual character of the landscape because all project construction impacts would be temporary and of short duration in any one area.

- The Los Banos, Midway and Gates and Cantua substations would occur within the substation fence lines. However, they are all located in different areas. Cantua and Gates substations are in Fresno County and predominantly surrounded by agricultural fields and would not damage the visual character of the region during construction. If the Cantua Substation microwave path option is selected, a new microwave tower would be installed. If the 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 would 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. Los Banos Substation is in Merced County along the south side of California State Route 152. It is predominantly surrounded by undeveloped land; a gas station travel center, hotel, RV park and small residential area are nearby. Midway Substation is 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 disturbed areas with farmer's co-op facilities. Although these substations have different types of locations whether it is agricultural fields or within a built community the existing visual character or quality of public views of the site would not have a less than significant impact

during construction. The fiber communication line has three alternatives that run parallel to I-5 and would be seen both during construction and operations. The height of the towers range between approximately 100-feet tall to 160-feet tall. However, there are existing transmission lines in the vicinity with which these fiber lines would share transmission line corridors. This would have a less than significant impact to any of the existing visual resources within the project area as the transmission lines already exist within the corridor.

Operation— *Less Than Significant Impact with Mitigation Incorporated*

Based on the analysis below, operation of the project would have a less than significant impact with mitigation on existing visual character or quality of public views of the site and its surroundings.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

The proposed solar facility would introduce a solar facility that is up to 8,840-acres into a landscape that is currently comprised of a patchwork of agricultural uses such as retired fields, row crops, and orchards. Viewers include local motorists with moderate viewer sensitivity and residents with high viewer sensitivity. The proposed solar array would appear as a solid, horizontal feature that does not contrast highly in the view. The step-up substation is generally visible as an indistinct cluster of grey horizontal and vertical lines. The industrial character of the solar facility, step-up substation and O&M facility would contrast with the existing agricultural site surrounding and result in a minor reduction of visual character and quality. The proposed gen-tie would add visually dominant human-made features and contribute to a decrease in visual coherence, intactness and unity within these views. The BESS component enclosures would be approximately 8.5 feet tall, and light or neutral in color. Amidst the 10-foot-tall solar panels and other components within the proposed solar facility, the BESS would be screened and generally obscured from all but very limited views such as where the BESS fronts local streets. Where the BESS is visible, viewers include local motorists with moderate viewer sensitivity and residents with high viewer sensitivity. The BESS would appear as solid boxy structures, similar in form to existing silos and storage tanks in the vicinity. The BESS would contribute to encroaching human-made features which decrease intactness and unity within the view. Mitigation measures would require a Surface Treatment Plan to be prepared and implemented for the project, which would ensure that potentially significant impacts associated with color contrast and glare for the project are reduced for new above-ground structural elements associated with the solar facility, step-up substation, O&M facility, BESS, and gen-tie line, as required by Condition of Certification (COC) **VIS-1**. With implementation of these measures, the operation impacts of these project components would be less than significant. The Surface Treatment Plan would require that the finishes on all new transmission and other structures with metal surfaces shall be non-reflective, and new conductors shall be non-specular. The Surface Treatment Plan would also address non-steel structural elements associated with project components, such as buildings and

storage tanks. Colors would be selected according to their ability to reduce the aesthetic impact associated with contrast with the surrounding landscape. Color finishes would be flat and non-reflective. The Surface Treatment Plan would include an evaluation of the final location of the step-up substation and BESS to evaluate structure finishes and color in the appropriate landscape context.

PG&E Utility Switchyard and Downstream Network Upgrades

The utility switchyard would be located west of I-5 on approximately forty acres; the site would be immediately adjacent to the PG&E Los Banos-Midway #2 500 kV transmission line and surrounded by agricultural land uses with some commercial and industrial uses such as Nunes Cooling, as well as the I-5 transportation corridor. Metal surfaces would be non-reflective. The facility would be visible to motorists on I-5 with low viewer sensitivity. The utility switchyard would appear in the landscape as a distinct cluster of grey horizontal and vertical lines, into which the gen-tie line would extend. The industrial character of the utility switchyard would contrast with the existing agricultural site surroundings and result in a reduction of visual character and quality, primarily associated with the level of contrast the facility would bring to its surroundings. To reduce potential significant impacts associated with contrast and glare for components of the utility switchyard, staff recommends a Utility Switchyard Surface Treatment Plan is prepared and implemented as required by Mitigation Measure **(MM) VIS-1**. The Utility Switchyard Surface Treatment Plan would require that the finishes on all new transmission and other structures with metal surfaces shall be non-reflective, new conductors shall be non-specular, and the plan would be prepared consistent with PG&E' surface treatment standards.

Once constructed, operation 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 Operations and Maintenance Program for the PG&E Transmission and Distribution System, which includes minor construction activities. This could include wood pole line construction/relocation and electrical tower line construction both no longer than one-mile, minor substation expansion and electrical underground line construction that occurs almost exclusively conducted in urban settings. These activities would create a less than significant impact on the existing visual character or quality of public views of the site as they would be temporary impacts during construction and short duration of time.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction— Less Than Significant Impact with Mitigation Incorporated

Based on the analysis below, construction of the project would have a less than significant impact with mitigation with respect to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Project lighting would be implemented in compliance with Fresno County Code of Ordinances. Care would be taken to prevent undue light pollution from nighttime operational and security lighting. Lighting fixtures would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and major roadways, and lighting at all facilities would be restricted to areas required for safety, security, and operation.

Existing sources of nighttime lighting near the BESS component include headlights from vehicles on roadways, scattered rural residences, and agricultural and commercial facilities. Construction lighting for the BESS component would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Mitigation measures would require a light pollution control plan or equivalent to ensure new outdoor light and glare emitted from the project site and construction laydown area does not result in light pollution as required by COC **VIS-2**.

Existing sources of nighttime lighting near the proposed solar facility, step-up substation sites, O&M facility and the gen-tie line include headlights from vehicles on roadways, scattered rural residences, and agricultural and commercial facilities. Sensitive receptors in the area primarily consist of motorists traveling along local roadways, who would not be affected substantially by the temporary increase in lighting during construction, and rural residents immediately proximate to the project site. While project construction activities would be visible to motorists on local roads and I-5, as well as rural residences, project construction lighting would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Mitigation measures would require a light pollution control plan or equivalent to ensure new outdoor light and glare emitted from the project site and construction laydown area does not result in light pollution as required by COC **VIS-2**.

PG&E Utility Switchyard and Downstream Network Upgrades

Existing sources of nighttime lighting near the utility switchyard include headlights from vehicles on roadways, scattered rural residences, and agricultural and commercial facilities. Construction lighting at the utility switchyard would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Mitigation measures would require a light pollution control plan or equivalent to ensure new

outdoor light and glare emitted from the project site and construction laydown area does not result in light pollution as required by **MM VIS-1**.

Substations and fiber line communications would have no impact to light and glare during construction as the fiber lines are long, linear optical ground wire or overhead on dedicated pole line routes along existing PG&E transmission line corridors, which generally run parallel to the Interstate 5 Freeway and proposed equipment upgrade activities would occur at Los Banos, Midway and Gates Substations while new equipment may be installed at Cantua Substation. The only light and glare would be temporary from construction activities if they occurred at night. No other impacts to light and glare would be from the network upgrades.

Operation— *Less Than Significant Impact with Mitigation Incorporated*

Based on the analysis below, operation of the project would have a less than significant impact with mitigation with respect to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

To reduce off-site lighting impacts, lighting at the BESS component locations would be restricted to areas required for safety, security, and operation. Security lights would use motion sensor technology that would be triggered by movement at a human's height, as not to be triggered by smaller wildlife. In the even that operations or maintenance activities are required outside of daylight hours. Vehicular headlights may be required, and portable light standards like those utilized during construction may be used. However, vehicular headlights are an existing source of light in the vicinity, and any additional lighting associated with nighttime operational activities would be temporary, infrequent, shielded, and directed downward. No new sources of substantial light would be created by these activities. To reduce potential impacts associated with glare and color contrast for components of the BESS, surface treatments would feature flat and non-reflective color finishes. These types of finishes are designed to reduce light reflection and color contrast and help blend the structures into the landscape setting. These finish specifications would be included in the Surface Treatment Plan, as required by COC **VIS-1**. With implementation of the plan, this project component would not create new substantial sources of glare and impacts.

Lighting at the proposed solar facility, step-up substation components would be restricted to areas required for safety, security and operations. Security lights would use motion sensor technology that would be triggered by movement at a human's height, so as not to be triggered by smaller wildlife. The level and intensity of lighting during operations would be the minimum needed. Portable lighting may be used occasionally for maintenance activities during operations, such as emergency work that must occur at night. This lighting may be visible for motorists along local roadways and I-5 and rural residents. However, operational lighting would be the minimum needed, and all lighting would be shielded and downward facing to prevent spillover onto adjacent

properties and roadways. Thus, lighting impacts resulting from these project components would be less than significant. It is not anticipated to install any new structure lighting as part of the proposed gen-tie line, with the exception of aviation lighting and/or marking that may be required for some structures. Upon completion of final design, the applicant would file with the Federal Aviation Administration (FAA), if necessary, for official study and determination of lighting and/or marking requirements for these structures. Aviation lights would direct light upward and outward without illuminating nearby areas directly below the lights and no visible reflected light would be visible from the ground surface. Aviation lighting would be visible for motorists along local roadways and I-5 as well as rural residences. However, any aviation lighting required for the project would be consistent with similar existing aviation lighting in the vicinity. Therefore, operational lighting impacts resulting from this project component would be less than significant. The proposed solar array would use fixed-tilt array, oriented along an east-west axis with panels facing generally south or single-axis tracking arrays, oriented along a north-south axis with panels tracking east to west to follow the movement of the sun. This tracking system would allow incident solar rays to be perpendicular to the solar photovoltaic (PV) panel. Any light that hits the panel would be reflected at an angle toward the light source rather than toward motorists or sensitive receptors on the ground. The reflection of sunlight off solar panel surfaces would be the primary source of potential glare from the project. Solar panels comprise cells designed to capture solar energy to convert it into useable energy. Therefore, solar panels are designed to absorb as much light as possible to maximize the efficiency of energy production. Additionally, the PCV panels would be treated with an anti-reflective coating that further reduces the reflectivity of the panels. As reported by the National Renewable Energy Laboratory (NREL), viewed from most near normal angles, modern PV panels reflect as little as two percent of incoming sunlight, about the same as water and less than soil or wood shingles (NREL 2018). Therefore, it is not anticipated that the proposed solar facility would result in an increased amount of glare regardless of if they were fixed-tilt or single-axis tracking, even if they were oriented in such a way as to face sensitive receptors or drivers. Therefore, operations and maintenance of the proposed solar facility would not introduce a source of glare that would significantly impact views in the area, and impacts would be less than significant. To reduce potential impacts associated with glare from structures associated with the step-up substation and gen-tie, structure surface treatments would feature flat and non-reflective color finishes. These types of finishes are designed to reduce light reflection and color-contrast and help blend the structures into the landscape setting. These finish specifications would be included in the Surface Treatment Plan as required by COC **VIS-1.**

PG&E Utility Switchyard and Downstream Network Upgrades

Existing sources of nighttime lighting near the utility switchyard include headlights from vehicles on local roadways and I-5, standalone light fixtures, and agricultural and commercial facilities. Project lighting care would be taken to prevent undue light pollution from nighttime security lighting. To reduce off-site lighting impacts, lighting at the utility switchyard would be restricted to areas required for safety, security, and

operation. Security lights would use motion sensor technology that would be triggered by movement at a humans' height, so as not to be triggered by smaller wildlife. The level and intensity of lighting during operations would be the minimum needed. Portable lighting may be used occasionally for maintenance activities during operations, such as emergency work that must occur at night. Infrequent security-related operational lighting from the utility switchyard would be visible for motorists along local roadways and I-5, and agricultural and commercial facilities. However, motorists would view this lighting from roadway speeds in the setting of the existing transportation corridor, which has existing sources of light from vehicle headlights and standalone light fixtures. Operational lighting would be the minimum needed, and the resulting impacts would be less than significant. To reduce potential impacts associated with glare and color contrast for components of the utility switchyard, the finish on all new structures would be non-reflective such as treated or galvanized steel to create a dull finish, which would reduce light reflection and help blend the structures into the landscape setting. These finish specifications would be included in the Utility Switchyard Surface Treatment Plan as required by **MM VIS-1**. With implementation of this plan would not create new substantial sources of glare and impacts would be less than significant.

Substations and fiber line communications would have no impact to light and glare during operation as the fiber lines are long, linear optical ground wire or overhead on dedicated pole line routes along existing PG&E transmission line corridors, which generally run parallel to the Interstate 5 Freeway and proposed equipment upgrade activities would occur at Los Banos, Midway and Gates Substations while new equipment may be installed at Cantua Substation. No other impacts to light and glare would be from the network upgrades.

5.15.2.3 Cumulative Impacts

Construction and Operation— *Less Than Significant Impact*

Based on the analysis below, project construction and operation would have less than significant impact on visual resources as the cumulative projects would not be visible from the Darden Clean Energy Project (DCEP).

Solar Facility, Battery Energy Storage System, Step-Up Substation, O&M Facility, and Generation-Intertie Line

Of all the 27 projects identified in **Appendix A, Table A-1**, cumulative projects that may individually have impacts to visual character and quality include the pistachio processing facility, bridge replacement, zoning change and solar facility. These cumulative projects range from 6.5 to 8.75 miles from the DCEP would not be visible from the DCEP. Therefore, the visual impacts of the project and the cumulative projects would not combine. The visual resource cumulative impacts of the project component would not be cumulatively considerable.

PG&E Utility Switchyard and Downstream Network Upgrades

For the same reasons described above, the visual resource cumulative impacts of this project component would not be cumulatively considerable.

5.15.3 Jurisdictional Project Components' Conformance with Applicable LORS

Table 5.15-1 presents staff's determination of conformance with applicable local, state and federal LORS, including any proposed Conditions of Certification, where applicable, to ensure the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed project would be consistent with all applicable LORS. The subsection below, "Staff Proposed Conditions of Certification," contains the full text of the referenced conditions of certification.

TABLE 5.15-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	Conformance and Basis for Determination
Local	
Fresno County Code of Ordinances Chapter 15, Article 20, Section 15-2015	
Places restrictions on outdoor lighting to reduce light pollution and glare.	Yes. The project would minimize impacts related to new sources of light and glare through adherence with County Code lighting standards and restrictions as required by COC VIS-2 .
Fresno County General Plan	
Policy OS-K.1 encourages the preservation of scenic views and vistas.	Yes. The project would minimize impacts to scenic views and vistas through implementation of a Surface Treatment Plan and a Utility Switchyard Surface Treatment Plan as required by COC VIS-1 .
Policy OS-K.4 requires development to minimize impacts to scenic site qualities.	Yes. The project would minimize impacts to scenic views and vistas through implementation of a Surface Treatment Plan and a Utility Switchyard Surface Treatment Plan as required by COC VIS-1 .
Policy OS-L.1 identifies I-5 as a designated scenic highway within Fresno County.	Yes. The project components would be visible from I-5 and the proposed gen-tie line would cross over and parallel I-5. The project would minimize impacts to views from I-5 through implementation of a Surface Treatment Plan and a Utility Switchyard Surface Treatment Plan as required by COC VIS-1 .
Policy OS-L.3 requires overhead utilities visible from I-5 to be routed and implemented to minimize impacts to scenic resources.	Yes. Overhead project components would be routed to follow existing overhead utility ROW which are located parallel, and crossing I-5 once and thus would minimize impacts to scenic resources visible from I-5 as required by COC VIS-3 .

5.15.4 Conclusions and Recommendations

As discussed above, the project would have a less than significant impact related to visual resources and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection 5.15.5 Proposed Conditions of Certification below. The COCs below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Impacts associated with the PG&E utility switchyard and downstream network upgrades to be considered for permitting by the California Public Utilities Commission (CPUC) would be further reduced with the inclusion of **MM VIS-1**.

5.15.5 Proposed Conditions of Certification

VIS-1 The project owner shall use exterior surface coatings, colors, finishes, materials, and a gloss level that diffuse illumination or collection, reflectance and scattering offsite and skyward from the exterior surfaces of the project buildings, structures, and equipment, and specifically include:

- a. An exterior surface coating, color, finish, material, and gloss level that minimize contrast and do not introduce specular reflection in the existing physical landscape.
- b. An exterior surface coating, color, finish, material, and gloss level that is in conformance with applicable adopted architectural design and site development related policies and ordinances of the County of Fresno.

The project owner shall submit to the Compliance Project Manager (CPM) for approval an exterior surface coatings, colors, finishes, and materials plan for the project buildings, structures and equipment that satisfy the above requirements and include the following:

1. A list of the large/major buildings, equipment, structures; perimeter wall and/or fence; transmission line towers and/or poles; above ground pipelines serving the facility onsite and offsite in public view, and a list of their proposed exterior surface coatings, colors, finishes, and materials identified by vendor, name and number, and according to the RAL color matching system or similar universal designation system.
2. Supply one set of brochures showing coating/color chips, and/or samples of the coatings/colors or finish, materials to be applied/installed to buildings, equipment, and structures.
3. A time schedule for the completion of the application/installation of the coating, color, finish, and materials.
4. A maintenance plan that includes procedures for the upkeep of the coatings, colors, finishes, and materials for the life of the project.

The project owner shall not purchase product or service from a vendor for the project exterior surface coatings, colors, finishes, materials prior to CPM approval of the exterior surface coating, color, finish, and materials plan.

Verification:

- a. The project owner shall submit an exterior surface coating, color, finish and materials plan to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Fresno for review and comment ninety (90) days prior to executing a contract to purchase coating, color, finish and materials with a vendor. The CPM shall provide the Director of Planning and Development Services at least 30 days to review the plan and provide comments to the applicant and the CPM.
- b. If the CPM determines that the exterior surface coating, color, finish, and materials plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.
- c. The project owner shall notify the CPM that exterior surface coatings, colors, and finishes of all listed buildings, equipment, and structures that has been completed are ready for inspection. With this notification, the applicant shall supply to the CPM one set of color photographs showing the project from the Key Views evaluated for the project certification, and individual color photographs showing the completed exterior surface coatings, colors, finishes, and materials for the following: the clarifiers, control room, cooling tower, maintenance building, thickener, and any other building, equipment, and structure as requested by the CPM. Color photographs may be electronically filed or manually filed on electronic media.
- d. Exterior surface coatings, colors, finishes, and materials shall be installed/applied (completed) on the exterior surfaces of the large/major buildings, equipment, and structures prior to the start of commercial operation.
- e. The project owner shall supply a description of the condition (status) of the exterior surface coatings, colors, finishes, and materials for the large/major buildings, equipment, structures, and others as needed for the reporting year in the Annual Compliance Report. The report shall include:
 1. The condition of the exterior surfaces of buildings, equipment, and structures at the end of the reporting year.
 2. A listing of maintenance activities performed during the reporting year.
 3. A tentative time schedule for maintenance activities for the upcoming year.

VIS-2 New outdoor light and glare emitted from the project site and construction laydown area shall not result in light being a pollutant offsite and skyward, "light pollution." The project owner shall include use of luminaires that:

- a. Only be on when needed.
- b. Only light the area that needs it.
- c. Illuminate no brighter than necessary.
- d. Minimize blue light emissions.
- e. Are fully shielded (BUG Rating U0).
- f. Are DarkSky International "DarkSky Approved" program products.
- g. Comply with the applicable adopted outdoor lighting regulations of the County of Fresno.

The project owner shall submit to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Fresno for review and comment a light pollution control plan or equivalent plan prepared for the project that satisfy the above requirements and include the following:

1. Supply one set of product brochures and/or printouts (e.g., diagram, drawing) showing and describing the types of outdoor luminaires to be applied/installed to buildings, equipment, structures, and other locations on the project site (lighting schedule).
2. A diagram(s) or drawing(s) of the project site showing the approximate location of the installation/placement of the luminaire and its direction and angle (luminaire location).

Verification:

- a. The project owner shall submit a light pollution control plan to the CPM for approval and simultaneously to the Director of Planning and Development Services for the County of Fresno for review and comment ninety (90) days prior to executing a contract to purchase permanent outdoor luminaires for the project. The CPM shall provide the Director of Planning and Development Services at least 30 days to review the plan and provide comments to the applicant and the CPM.
- b. If the CPM determines the light pollution control plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.
- c. The project owner shall notify the CPM when the installation of the luminaires has been completed and are ready for inspection. After inspection if the CPM requires a modification to a luminaire(s) (e.g., design, installation, location), the project owner shall have 30 days after receiving the notification to complete the modification and request a follow-up inspection.

- d. If a light and glare complaint is filed with the project owner within 48 hours of receiving the complaint, the project owner shall supply the CPM with a completed complaint resolution form report as specified in the Compliance Conditions, a proposal to resolve the complaint and time schedule for resolution. The project owner shall notify the CPM within 48 hours after completing/resolving the complaint.

VIS-3 New overhead support structures within close proximity to I-5 and new utility wires crossing I-5 shall be sited as to not be a visual impact for drivers along the I-5 corridor. The structures should follow the same Surface Treatment Plan for these structures to have exterior surface coatings, colors, finishes, materials, and a gloss level that diffuse illumination or collection, reflectance and scattering offsite and skyward from the exterior surfaces.

Verification:

- a. The project owner shall submit a plan locating the support structures adjacent to I-5 for approval to the CPM, Director of Planning and Development Services for the County of Fresno for review and comment ninety (90) days prior to siting the structures.
- b. The project owner shall submit an exterior surface coating, color, finish and materials plan for the utility structures crossing I-5 for approval to the CPM, Director of Planning and Development Services for the County of Fresno for review and comment ninety (90) days prior to executing a contract to purchase coating, color, finish and materials with a vendor. The CPM shall provide the Director of Planning and Development Services at least 30 days to review the plan and provide comments to the applicant and the CPM.
- c. If the CPM determines that the exterior surface coating, color, finish, and materials plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.
- d. The project owner shall notify the CPM that exterior surface coatings, colors, and finishes of the structures has been completed are ready for inspection. With this notification, the applicant shall supply to the CPM one set of color photographs showing the project from the Key Views evaluated for the project certification, and individual color photographs showing the completed exterior surface coatings, colors, finishes, and materials as requested by the CPM. Color photographs may be electronically filed or manually filed on electronic media.
- e. Exterior surface coatings, colors, finishes, and materials shall be installed/applied (completed) on the exterior surfaces of the structures prior to the start of commercial operation.

5.15.6 Recommended Mitigation Measures for Nonjurisdictional Project Components

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). The measures are necessary to reduce light reflection and color-contrast and help blend the structures into the landscape setting, and to minimize casting light and/or glare to off-site locations.

MM VIS-1 PG&E Utility Switchyard and Downstream Network Upgrades Surface Treatment Plan. To reduce potential significant impacts associated with contrast and glare for components of the utility switchyard and downstream network upgrades, the applicant will prepare and implement a Utility Switchyard and Downstream Network Upgrades Surface Treatment Plan. The Utility Switchyard and Downstream Network Upgrades Surface Treatment Plan will require that the finishes on all new transmission and other structures with metal surfaces shall be non-reflective, new conductors shall be non-specular, and the plan will be prepared consistent with PG&E's surface treatment standards.

5.15.7 References

- Caltrans 2018 – California Department of Transportation (Caltrans). 2018. California State Scenic Highways Map. Available online at: <https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca>
- Caltrans 2023a – California Department of Transportation (Caltrans). 2023. California State Scenic Highways. Available online at: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>
- Caltrans 2023b – California Department of Transportation (Caltrans). 2023. Visual Impact Assessment Handbook. Available online at: <https://dot.ca.gov/-/media/dot-media/programs/design/documents/via-handbook--a11y.pdf>
- Fresno. 2000b – Fresno County General Plan Draft Environmental Impact Report. Available online at: https://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_EIR/EIR/toc.html
- Fresno 2023a – General Plan Background Report. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgrpr-background-report-2023-05-10.pdf>
- Fresno 2024 – Fresno County General Plan Policy Document dated February 2024. Accessed in January 2025. Available online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgrpr_general-plan_county_final_2024_02.pdf

- IP 2024n – Intersect Power (TN 260642). Updated Project Description. December 2024. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024mm – Rincon Consultants, Inc. (TN 260651). Supplemental Data Response Set 1 – Appendix J SUP DR PD-1 Updated Visual Simulations Part 3. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024nn – Rincon Consultants, Inc. (TN 260652). Supplemental Data Response Set 1 – Appendix J SUP DR PD-1 Updated Visual Simulations Part 2. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024oo – Rincon Consultants, Inc. (TN 260653). Supplemental Data Response Set 1 – Appendix J SUP DR PD-1 Updated Visual Simulation Part 1. Dated December 13, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Roland 2019 – James Roland, “How Far Can We See and Why?” May 23, 2019. Available online at: <https://www.healthline.com/health/how-far-can-the-human-eye-see>

5.16 Water Resources

5.16.1 Environmental Setting

The project would be located in unincorporated Fresno County, approximately 25 miles southwest of Fresno, California, and 5 miles east of community of Cantua Creek. The project will cover approximately 9,100 acres of agricultural land between South Sonoma Avenue to the west and South Butte Avenue to the east currently owned by the Westlands Water District (WWD). The project would include a solar facility consisting of a photovoltaic (PV) panel field, a battery energy storage system (BESS), an operation and maintenance (O&M) facility, and a step-up substation. The Project's gen-tie line would span approximately 10 miles to 15 miles west from the intersection of South Sonoma Avenue and West Harlan Avenue to immediately west of Interstate 5 (I-5), where it would connect to the new utility switchyard along Pacific Gas and Electric Company's (PG&E) Los Banos-Midway #2 500 kV transmission line (RCI 2023ff). According to the Fresno County zoning geoportal website, the entire project area is zoned as exclusively agriculture (Fresno County 2024c).

Stormwater Drainage and Water Quality

Stormwater from the proposed project area would drain into the five following level 12 Hydrologic Unit Code (HUC) watersheds (DWR 2024):

- Lower Cantua Creek (HUC 180300090605)
- Town of Helm – Fresno Slough (HUC 180300090607)
- Fresno Slough (HUC 180300090608)
- Town of Cantua Creek (HUC 180300090802)
- Mud 1085 Dam – Fresno Slough (HUC 180300090803)

According to the United States Environmental Protection Agency's (USEPA) *How's My Waterway* website, Fresno Slough and Cantua Creek are listed as impaired. Fresno Slough flows through multiple watersheds (HUC 180300090607, HUC 180300090608 & HUC 180300090803) and joins with the San Joaquin River near the town of Mendota. The water quality of the Fresno Slough is affected by pesticides, including chlorpyrifos noted as being toxic. Cantua Creek flows east from the Coast range, through the Lower Cantua Creek watershed, and disappears in the western San Joaquin Valley immediately west of the California Aqueduct. The water quality of Cantua Creek is affected by metals and pesticides (USEPA 2024).

The applicant proposes to control stormwater runoff within the solar facility during substantial rain events by constructing detention basins on the downslope corners (typically the northeast) of 16 designated drainage areas (RCI 2024u).

Groundwater

The project site is within the San Joaquin Valley groundwater basin, Westside subbasin (5-22.09) northeast of the Coast Range, southeast of the Delta-Mendota subbasin (5-22.07), southwest of the Kings subbasin (5-22.07), and northwest of the Tulare Lake subbasin (5-22.12). The Westside subbasin consists of lands of the WWD (DWR 2006). The Westside subbasin has been identified as a critically overdrafted, high priority basin (DWR 2020), and is under a Groundwater Sustainability Plan (GSP) overseen by the WWD and Fresno County as the Groundwater Sustainability Agencies (GSAs) (Luhdorff & Scalmanini 2022).

The local region along the southwest margin of the San Joaquin valley has experienced extensive subsidence in the past due to groundwater overdraft. Between 1925 and 1977 near Mendota, California, land subsidence was estimated at nearly 30 feet (Ireland, Poland and Riley 1984). Remote sensing in conjunction with global positioning system (GPS) stations measured subsidence in the vicinity of the project site as between 0.08 and 0.3 inches during a later period of drought (2008 – 2010) (USGS 2024). Since 2015, the Department of Water Resources (DWR) has been continuously monitoring land subsidence using Interferometric Synthetic Aperture Radar (InSAR) to support implementation of the Sustainable Groundwater Management Act (SGMA). Since that time, subsidence in the area of the project site has been less than a foot, and less than an inch in the past year (DWR 2025b).

Fresh water in the Westside subbasin occurs in two distinct zones; the upper and lower, which are separated by the Corcoran Clay (or E-Clay). Both aquifer zones consist of continental sediments composed of clay, silt, and sand, and are Quaternary to Tertiary in age. The upper zone is unconfined to semi-confined and consists of younger alluvium, older alluvium and a portion of the Pleistocene Tulare Formation above the Corcoran Clay. Within the uppermost 100 feet of this zone, water accumulates as a result of irrigation recharge, is separated from the main upper zone aquifer, and is therefore not considered part of the aquifer system. The lower zone is confined, consists of the Tulare Formation below the Corcoran Clay and the most uppermost part of the Pliocene San Joaquin Formation, and is underlain by saline water (Croft 1972, DWR 2006, Luhdorff & Scalmanini 2022). Beneath the project site, the Corcoran Clay ranges between depths of 600 to 650 feet below ground surface and 20 to 80 feet in thickness (Page 1986). The Corcoran Clay is also continuous beneath the San Joaquin Valley extending from Bakersfield northwest to Manteca (CBI 2024).

Flooding

The proposed main project area is located within Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs) panels 06019C2550H and 06019C2825H (FEMA 2009a, FEMA 2009c). Approximately 20 percent of the acreage of the main project area is within Zone A special flood hazard area, the remainder is within Zone X, outside of a special flood hazard area. The utility switchyard parcel west of I-5 is located within FEMA FIRM panel 06019C2775H (FEMA 2009b). Ten percent of the utility switchyard parcel is within Zone A, with the remainder in Zone X.

Zone A is defined as subject to a 1 percent (or 100-year) annual chance floodplain, where no base flood elevations have been determined, while Zone X is defined as areas determined to be outside the 0.2 percent (or 500-year) annual chance floodplain (FEMA 2009a, FEMA 2009b, FEMA 2009c & FEMA 2024).

The overall project area is not near the coast and therefore not within an area mapped as vulnerable to sea level rise in the National Oceanic and Atmospheric Administration's (NOAA) *Digital Coast, Sea Level Rise Viewer* (NOAA 2023).

According to the *Dam Breach Inundation Map Web Publisher* sponsored by the California Department of Water Resources (DWR), there are two local dam structures near the project area. Both are flood control facilities on the Fresno Slough. The "Mud" dam is approximately 3 miles northwest, and the Stinson Weir is approximately 9 miles east of the main project area. Both facilities are noted as a low inundation hazard and are unlikely to inundate the project area due to low storage capacity and the tendency to follow the drainage of the Fresno Slough (DWR 2025a).

Since the project area is not located near the coast or a large body of water, there is no danger of a tsunami or seiche.

Regulatory

Federal

Clean Water Act and California's Porter-Cologne Water Quality Control Act.

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) are responsible for the regulation and enforcement of the water quality protection requirements of the federal Clean Water Act (CWA) and the state's Porter-Cologne Water Quality Control Act (Porter-Cologne). The National Pollutant Discharge Elimination System (NPDES) is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the beneficial uses of the state's surface and groundwater resources for public benefit and environmental protection. Protection of water quality could be achieved by ensuring the proposed project complies with applicable NPDES permits from the SWRCB or the Central Valley RWQCB.

Section 404(a) of the CWA identifies the U.S. Army Corp of Engineers (USACE) as the authority to issue permits for the discharge of fill and dredging material into navigable waters, defined as waters of the United States (CWA Section 502 [7]). Under Section 401(a) of the CWA, any applicant of a permit under the CWA must provide a State certification to the Federal permitting agency. In California, the local RWQCB is the Section 401 certifying agency. According to the biological resources assessment submitted by the applicant, only the gen-tie line crossing of the California Aqueduct would be jurisdictional to the USACE and also the RWQCB. Five ephemeral streams adjacent to the utility switchyard, and a section of Cantua Creek that parallels the gen-tie line would be considered non-wetland water of the State (RCI 2023rr).

Under Section 303(d) of the CWA, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. TMDL is the quantity of pollutant that can be assimilated by a water body without violating water quality standards. As noted in the environmental setting section, one of the two HUC 12 watersheds in the project area, Fresno Slough, is listed as impaired with pesticides on the Impaired Waters for California according to Section 303(d) List of the CWA (USEPA 2024). Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation.

Federal Emergency Management Agency Flood Insurance Program. The magnitude of flood used nationwide as the standard for floodplain management is a flood having a probability of occurrence of one percent in any given year, also known as the 100-year flood, or base flood. FIRM, the official map created and distributed by FEMA for the National Flood Insurance Program that shows areas subject to inundation by the base flood for participating communities. FIRMs contain flood risk information based on historic, meteorologic, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development. As stated above in the environmental setting section, approximately 20 percent of the project area is located within Zone A inside the 1 percent annual chance floodplain and the remainder of the project area is located in Zone X and therefore is outside the 0.2 percent annual chance floodplain.

State

Sustainable Groundwater Management Act (AB 1739, SB 1168 & SB 1319).

The 2014 Sustainable Groundwater Management Act (SGMA) requires local public agencies and GSAs in high and medium priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs. GSPs are detailed road maps for how groundwater basins will be managed to reach long-term sustainability.

Executive Order N-7-22. In response to extreme and expanding drought conditions in California, the Governor issued Executive Order (EO) N-7-22 in March of 2022. Among other water resource considerations, EO-7-N-22 prohibits counties, cities, and other public agencies from approving permits for either the construction of new groundwater wells or the alteration of existing wells that are within a Sustainable Groundwater Management Act- (SGMA) regulated medium or high-priority groundwater basin unless:

1. the GSA managing the basin verifies in writing that the proposed groundwater extractions:
 - a. would be consistent with any applicable GSP; and
 - b. would not decrease the likelihood of achieving a sustainability goal for the basin; and

2. the well-permitting agency determines that extraction of groundwater from the proposed or modified well is not likely to:
 - a. interfere with the production and functioning of existing nearby wells; and
 - b. cause subsidence that would adversely impact or damage nearby infrastructure.

Because the project proposes to construct a new well to serve project water demand, EO N-7-22 would apply since the Westland Subbasin is defined as a high priority groundwater basin. The GSAs for the groundwater basin would need to verify that stated conditions are met with respect to groundwater and that the new well would be consistent with the Westland Subbasin GSP.

California Water Code

Section § 13800 and DWR Bulletins 74-81 & 74-90. This section of the California Water Code authorized DWR to establish water well construction standards and delegate permitting authority to local jurisdictions. DWR presents well construction standards in bulletins 74-81 (DWR 1981) and 74-90 (DWR 1991).

Section 13750.5. This section of the California Water Code requires that any contractor drilling and constructing a water well should possess a valid C-57 Water Well Contractor's License.

Local

Local Agency Management Program for Onsite Wastewater Treatment Systems. The Federal CWA, the California Water Code, and the Porter-Cologne Act authorizes SWRCB and associated regional boards to regulate discharges that could impact surface and groundwater. SWRCB in turn delegates this authority to local agencies with respect to onsite wastewater treatment systems (OWTS) through the Local Agency Management Program (LAMP). The Fresno County Public Works and Planning Department (FCPYPD) is the local agency responsible for OWTS such as septic systems (Fresno County 2019). A septic system to serve the O&M building is proposed as part of the project.

Fresno County General Plan. The following goals and policies under the Agricultural and Land Use, and Public Facilities and Services elements apply to hydrology and water quality issues related to the project (Fresno County 2024a):

- Agricultural and Land Use Element
 - Goal LU-A.19 – Reduced Soil Erosion: The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity.
 - Goal LU-A.20 – Water Resources: The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources.
 - Goal LU-A.22 – Drought Impacts: The County shall adopt and support policies and programs that seek to minimize the impact of reoccurring drought conditions on ground water supply and the agricultural industry.

- Public Facilities and Services Element
 - Policy PF-C.1: The County shall actively engage in efforts and support the efforts of others to retain existing water supplies within Fresno County.
 - Policy PF-C.3: To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.
 - Policy PF-C.4: The County shall support efforts to expand groundwater and/or surface water storage that benefits Fresno County.
 - Policy PF-C.6: The County shall recommend to all cities and urban areas within the county that they adopt the most cost-effective Urban Water Management Plans published and updated by the California Urban Water Agencies, California Department of Water Resources, or other appropriate agencies as a means of meeting some of the future water supply needs.
 - Policy PF-C.11: The County shall approve new development only if an adequate sustainable water supply to serve such development is demonstrated.
 - Policy PF-C.12: In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.

Fresno County Ordinances. The following County ordinances are applicable to the project:

- 14.04 & 14.08: These County Codes establish the requirements for the construction, repair, reconstruction, change of use or destruction of any well used for domestic, industrial, commercial or agricultural purposes.
- 15.28.010: The County adopts Chapter 18, Chapter 33 and Appendix J of the 2022 California Building Code and Chapter 4, Division 4.1 of the California Green Building Standards Code by reference, except as otherwise provided, are applicable to cover all grading and excavation within the unincorporated area of the County of Fresno.
- 15.48.080: This County Code provides standards of construction to reduce the impacts of flooding in FEMA special flood hazard zones. These flood hazard zones occur in the northern sector of the main project area and PV panel electrical wiring could be affected.

Cumulative

Appendix A, Table A-1 lists projects under review by the Fresno County Planning Commission, or currently in development. With the exclusion of those EIRs associated with a plan, rezoning or variance, there are 19 active projects under evaluation by Fresno County. In addition, some of the projects either have a water source other than local groundwater or are outside the San Joaquin Valley – Westside groundwater basin and would not likely share the same groundwater conditions as the subject project.

Therefore, the following nine projects are evaluated with respect to water resources cumulative impacts:

- Solar Energy
 - Heartland Hydrogen Project (FC-9)
 - Scarlet Solar (FC-12)
 - Sonrisa Solar Project (FC-13)
 - Tranquility Solar Project (FC-14)
 - Luna Valley Solar (FC-15)
 - Westlands Solar Park (WWD-1)
- Commercial
 - Gas Station and Convenience Store (FC-8)
 - Agricultural Commercial Center (FC-10)
 - Multi Use/Freeway Commercial Development (FC-11)

5.16.2 Environmental Impacts

WATER RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:				
i. result in substantial erosion or siltation, on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. create or contribute runoff water which would exceed the capacity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WATER RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or				
iv. impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, hydrology and water quality and utilities and service systems.

5.16.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The California Environmental Quality Act (CEQA) guidelines, Appendix G, provide a checklist of questions that lead agencies typically address when assessing impacts related to water resources (or hydrology and water quality in CEQA).

To assess potential impacts concerning water resources, staff has reviewed online sources of maps, literature and information of the surrounding area, as well as site-specific information provided by the project applicant. Specific quantitative thresholds of significance are not applicable to this evaluation.

5.16.2.2 Direct and Indirect Impacts

a. Would the project violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, with the implementation of condition of certification (COC) **WATER-1** and **MM WATER-1**, project construction would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

The proposed project would consist of the following components (IP 2025e, IP 2024n):

- Solar Facility – 8,835 acres
- BESS Facility – 35 acres
- O&M Complex – 6 acres
- Step-up Substation – 20 acres
- Gen Tie-In Line – 15 miles from the step-up substation to the utility switchyard

Although the solar facility would cover 8,835 acres, only an estimated 4,000 acres would be disturbed to install the PV panel units. Likewise, the gen tie-in line would only result in an estimated 21 acres of soil disturbance assuming use of the “H” frame transmission line structures (RCI 2023c). Therefore, accounting for all the project components, approximately 4,082 acres of land during construction and be subject to construction-related stormwater requirements of the Construction General Permit (CGP). Prior to any ground-disturbing construction activity, the applicant would prepare a construction Stormwater Pollution Prevention Plan (SWPPP) to comply with the CGP per COC **WATER-1**. With the implementation of the SWPPP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction.

According to the application project description, soil would be excavated to a maximum depth of 6 feet below grade during trenching activities (RCI 2023ff), and a maximum of 40 feet during installation of transmission line structures (RCI 2023oo).

As discussed in Section 5.16.1, first encountered groundwater is anticipated at approximately 100 feet below ground surface (bgs). However, if groundwater is encountered during excavation activities, dewatering would be necessary. If dewatering discharge is found to be uncontaminated, the project owner would be allowed to discharge it to waters of the U.S. under the CGP. If the discharge is found to be contaminated, a special permit through the Central Valley RWQCB would be necessary

depending on the nature of the contamination, requiring the applicant to treat the water before discharging or hauling away the untreated water by a permitted service provider.

During project construction, temporary toilet and sanitary facilities would be provided and served by a third-party contractor.

Thus, project construction would not be expected to violate water quality standards or waste discharge requirements during construction, and impacts would be less than significant with mitigation.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades that include the transmission line to the Los Banos-Midway 500kv line, the fiber optic communication line to the Panoche and Gates substations, and improvements to the Los Banos, Midway and Gates substation, are under the jurisdiction of the California Public Utilities Commission (CPUC). Construction of the PG&E utility switchyard and the network upgrades would still be subject to the requirements of the CGP and implementation of recommended **MM WATER-1** is advised.

Operation– Less Than Significant with Mitigation Incorporated

Based on the analysis below, with the implementation of **WATER-2** and **WATER-4** and **MM WATER-2**, the project's operation would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

A project operations Drainage, Erosion, and Sedimentation Control Plan (DESCP) would be prepared to monitor stormwater events and associated best management practices (BMPs) per COC **WATER-2**. During project operations, wastewater would be produced from permanent toilet and sanitary facilities. The project would include an OWTS, such as a septic/leach-line system.

As stated in Section 5.16.1, the applicant proposes to control stormwater runoff in the project area during substantial rain events by constructing detention basins on the downslope corners (typically the northeast) of 16 designated drainage areas (RCI 2024u). Details regarding the effectiveness and treatment of stormwater capture are lacking. Therefore, a requirement to provide design details for the detention basins is included with COC **WATER-2**.

As the local agency under LAMP, FCPWPD has the responsibility to evaluate septic system design and site conditions to ensure the proposed facility would conform with OWTS requirements and will confer with the California Energy Commission (CEC) per COC **WATER-4**.

The project would not be expected to violate water quality standards or waste discharge requirements during operation.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard and network upgrades that include the transmission line to the Los Banos-Midway 500kv line, the fiber optic communication line to the Panoche and Gates substations, and improvements to the Los Banos, Midway and Gates substation, are under the jurisdiction of the CPUC. Stormwater control and to minimize impact to runoff water quality during operation of the PG&E utility switchyard would still be required. It is recommended that a DESCP be prepared to control the effects of stormwater runoff during operation of the PG&E utility switchyard per staff's recommended **MM WATER-2**.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Construction and Operation– Less Than Significant with Mitigation Incorporated

Based on the analysis below, with the implementation of COCs **WATER-5** and **WATER-6**, the project operation and construction would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The potential impact is less than significant with mitigation incorporated.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As part of a settlement between WWD and the U.S. Department of Justice (USDOJ) to resolve a dispute regarding the U.S. Bureau of Reclamation (USBR) responsibility to provide drainage for farmland within the water district, WWD will permanently retire 100,000 acres from irrigation and transfer use to non-irrigable applications, such as renewable energy projects (USDOJ & WWD 2015). This project complies with the land repurposing condition of the 2015 settlement.

Water supply for the project would be groundwater provided by virtue of an option agreement between WWD and the applicant to purchase the property underlying the project area. As part of the purchase option agreement, the buyer may extract 130 acre-feet per year (AFY) for project construction, and 2-acre feet (AF) for every 320 acres purchased by the buyer during project operation. As a condition of the agreement, the buyer would be subject to applicable regulations promulgated by the GSAs (including WWD) under the SGMA (RCI 2024ww).

Thus, the applicant would be entitled to approximately 3,697 AFY, given the proposed purchase of 9,100 acres, for construction-related activities such as dust suppression, soil compaction and grading. This amount of water far exceeds the proposed construction water demand of 1,100 AF over a maximum 36-month period, or about 367 AFY. During project operations, the applicant would be entitled to approximately 57 AFY given the proposed property purchase amount, exceeding the proposed operational water demand of 35 AFY. Construction and operations water demand will be recorded, and the purchase option agreement between the applicant and WWD verified, per COC **WATER-6**.

To provide project water supply, groundwater production well(s) would be installed within the O&M building compound in accordance with State water well standards (DWR 1981, DWR 1991) and Fresno County ordinance to comply with COC **WATER-5**.

As noted in Section 5.16.1, the project is located within a region that has experienced land subsidence in the past due to groundwater overdraft in support of local agriculture. However, the land associated with the project is being repurposed as a part of the 2015 USDOJ/WWD settlement. How much water will be saved by converting land use from agriculture to solar power production can be estimated by comparing the current average agricultural water usage within WWD with the proposed usage for solar power production during operation. The amount of irrigable land within WWD is 568,000 acres (WWD 2023) and historical WWD use of groundwater has averaged 282,784 AFY from 1988 through 2024 (WWD 2025). That would yield an agricultural water usage rate of 0.50 AFY/acre. If this rate were applied to the project area of 9,100 acres, an agricultural water usage of 4,550 AFY would result. Both the proposed project construction water demand of 1,100 AF and the operational water demand of 35 AFY are diminutive compared to this figure.

Moreover, the purpose of the Sustainable Groundwater Management Act (SGMA) was to establish a framework to manage groundwater resources in a sustainable manner. The applicant's compliance with Fresno County and WWD implementing SGMA as the local GSAs would be a condition of the purchase option agreement. Also, the Governor's Executive Order N-7-22 issued in March of 2022 strengthens some of the groundwater development restrictions of SGMA. In addition, as stated in the "Environmental Setting" subsection, DWR has been continuously monitoring land subsidence using InSAR to support implementation of SGMA since 2015 (DWR 2025b).

With incorporation of the conditions detailed in COCs **WATER-5** and **WATER-6**, as well as compliance with SGMA, the project would not be expected to overdraft local groundwater resources.

PG&E Utility Switchyard and Downstream Network Upgrades

Water used for construction of the PG&E utility switchyard and the network upgrades would be included in the 1,100 AF construction water demand for the overall project.

Currently, there is no proposed water demand for operation of the PG&E utility switchyard.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:

i. Result in substantial erosion or siltation, on- or offsite;

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, with the implementation of COCs **WATER-1** and **WATER-2** and **MM WATER-1** and **MM WATER-2**, the project's operation and construction would not substantially alter the existing drainage pattern of the site or area. The potential impact is less than significant with mitigation incorporated.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As discussed in criterion "a", the impact of erosion during project construction would be addressed by the SWPPP prepared as part of the CGP requirement described in **WATER-1**. During operations, stormwater runoff from the project facilities would be addressed by the project operations DESCP prepared per **WATER-2**.

With respect to the applicability of CWA Section 404 permitting, the biological resources assessment submitted by the applicant only identified the gen-tie line crossing of the California Aqueduct as under USACE jurisdiction (RCI 2023rr). However, since the scope of the project does not entail discharge of fill and dredging material into waterways, Section 404 permitting would not apply.

The project would not be expected to cause substantial erosion either during construction or operation, and impacts would be less than significant with mitigation.

PG&E Utility Switchyard and Downstream Network Upgrades

As described in Criteria "a", the project would not be expected to cause substantial erosion during construction, if the requirements of the CGP are followed per staff's recommended **MM WATER-1**. During operations, erosion would be controlled if the recommended DESCP is prepared per **MM WATER-2**.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, with the implementation of COCs **WATER-1** and

WATER-2 and **MM WATER-1** and **MM WATER-2**, the project's operation and construction would not substantially increase the rate or amount of surface water runoff in a manner that would result in flooding. The potential impact is less than significant with mitigation.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As discussed in criterion "a", the impact of offsite flooding due to surface water runoff from construction activities would be addressed by the SWPPP prepared by requirement of the CGP (per COC **WATER-1**). During operations, stormwater runoff within the project area would be captured by the detention basins and would be further addressed by the operation DESCP prepared per COC **WATER-2**.

The project would not be expected to cause off-site flooding due to surface water runoff during construction or operation, and impacts would be less than significant with mitigation.

PG&E Utility Switchyard and Downstream Network Upgrades

As described in Criteria "a", the project would not be expected to increase on or off-site flood during construction, if the requirements of the **MM WATER-1**. During operations, erosion would be controlled if the recommended DESCP is prepared per staff's recommended **MM WATER-2**.

- iii. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or**

Construction and Operation– Less Than Significant with Mitigation Incorporated

Based on the analysis below, with the implementation of COCs **WATER-1** and **WATER-2** and **MM WATER-1** and **MM WATER-2**, the project's operation and construction would not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. The potential impact is less than significant with mitigation.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

Currently, a system of ditches is in place as part of the agricultural infrastructure to drain tailwater. However, as discussed in criterion "a" above, stormwater runoff during construction would be minimized by the practices employed per the CGP SWPPP (per COC **WATER-1**). During operation, stormwater runoff from project facilities would be addressed by the operation DESCP prepared per COC **WATER-2**.

With mitigation, this project component would not be expected to create surface water runoff that would exceed stormwater drainage capacity either during construction or operation.

PG&E Utility Switchyard and Downstream Network Upgrades

As described in Criterion “a”, the project would not be expected to exceed the capacity of nearby agricultural drainage during construction, if the requirements of staff’s recommended **MM WATER-1**. During operations, erosion would be controlled if the recommended DESCP is prepared per staff’s recommended **MM WATER-2**.

iv. Impede or redirect flood flows?

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, with the implementation of COCs **WATER-1** and **WATER-2** and **MM WATER-1** and **MM WATER-2**, the project’s operation and construction would not impede or redirect flood flows. The potential impact is less than significant with mitigation incorporated.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

The proposed main project area is located within FEMA flood insurance rate map panels 06019C2550H and 06019C2825H (FEMA 2009a, FEMA 2009c). Approximately 20 percent of the acreage of the main project area is within Zone A special flood hazard area, the remainder is within Zone X, outside of a special flood hazard area. The utility switchyard parcel west of I-5 is located within FEMA FIRM panel 06019C2775H (FEMA 2009b). Ten percent of the utility switchyard parcel is within Zone A, with the remainder in Zone X. Zone A is defined as subject to a 1 percent (or 100-year) annual chance floodplain, while Zone X is defined as areas determined to be outside the 0.2 percent (or 500-year) annual chance floodplain (FEMA 2009a, FEMA 2009b, FEMA 2009c & FEMA 2024).

However, as discussed in criterion “a”, flood water flow would be managed during construction as described in the SWPPP prepared as part of the CGP requirement described in COC **WATER-1**, and during operation by implementation of the DESCP required in COC **WATER-2**.

Therefore, the project would not be expected to impede or redirect flood water flow either during construction or operation, and impacts would be less than significant with mitigation.

PG&E Utility Switchyard and Downstream Network Upgrades. As described in Criterion “a”, the project would not be expected to exceed the capacity of nearby agricultural drainage during construction, with requirements of staff’s recommended **MM WATER-1**. During operations, erosion would be controlled if the recommended DESCP is prepared per staff’s recommended **MM WATER-2**.

d. Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Construction– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, the project operation and construction would not risk release of pollutants due to project inundation. However, flood waters could affect the electrical connections to the PV panels within the solar facility. This contingency would be addressed by implementing COC **WATER-3**.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As described in Section 5.16.1., only about 20 percent of the main project area is within Zone A special flood hazard area and lies within a 100-year floodplain. According to DWR's *Dam Breach Inundation Map Web Publisher*, there are two local flood control structures that are at a low risk to inundate the project area. Since some of the PV panel array would be located within a 100-year floodplain, therefore, COC **WATER-3** is proposed to ensure that PV panel wiring and connections are protected from inundation within these areas.

The project site is not located near the coast or a large body of water, therefore there is no danger of a tsunami, seiche, or vulnerability to sea level rise.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard is located in FEMA FIRM Zone X outside of a special flood hazard area and is not near the coast or a large body of water, therefore there is no danger of a tsunami, seiche, or vulnerability to sea level rise.

Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, the project operation and construction would not risk release of pollutants due to project inundation with the incorporation of COC **WATER-3**.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As explained above, although portions of the PV panel array lie within a 100-year flood zone, implementation of COC **WATER-3** would ensure that wiring and connections to PV panels are protected from inundation within these areas.

The project site is not located near the coast or a large body of water, therefore there is no danger of a tsunami, seiche, or vulnerability to sea level rise.

PG&E Utility Switchyard and Downstream Network Upgrades

The PG&E utility switchyard is located in FEMA FIRM Zone X outside of a special flood hazard area and is not near the coast or a large body of water, therefore there is no

danger of a tsunami, seiche, or vulnerability to sea level rise.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction and Operation– *Less Than Significant with Mitigation Incorporated*

Based on the analysis below, with the implementation of COCs **WATER-5** and **WATER-6**, the project's operation and construction would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The potential impact is less than significant with mitigation.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As discussed in criterion "b", project construction water demand of 1,100 AF and the operational water demand of 35 AFY would be groundwater provided through a purchase option agreement with WWD. The purchase agreement with WWD, as well as tracking construction/operations water demand would be addressed under COC **WATER-6**. Groundwater production well(s) would be installed within the O&M building compound in accordance with State water well standards (DWR 1981, DWR 1991) and Fresno County ordinance to comply with COC **WATER-5**. SGMA establishes a framework to manage groundwater resources in a sustainable manner and the applicant's compliance with the local GSAs (Fresno County and WWD) implementation of SGMA as a condition of the purchase option agreement. In addition, DWR has been continuously monitoring land subsidence using InSAR to support implementation of SGMA since 2015 (DWR 2025b).

With incorporation of the conditions detailed in COC **WATER-5** and **WATER-6**, as well as compliance with SGMA, the project would not be expected to overdraft local groundwater resources, and impacts would be less than significant with mitigation.

PG&E Utility Switchyard and Downstream Network Upgrades

Water used for construction of the PG&E utility switchyard and network upgrades would be included in the 1,100 AF construction water demand for the overall project. Currently, there is no proposed water demand for operation of the PG&E utility switchyard.

f. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Construction and Operation– *Less Than Significant with Mitigation*

Incorporated

Based on the analysis below, with the implementation of COCs **WATER-5** and **WATER-6**, the project's construction and operation will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. The potential impact is less than significant with mitigation.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

As discussed in criteria "b" and "e", water for project construction and would be groundwater extracted from the project property by means of a purchase option agreement with WWD. The purchase agreement with WWD, as well as tracking construction/operations water demand would be addressed under COC **WATER-6**. Groundwater production well(s) would be installed in accordance with State water well standards (DWR 1981, DWR 1991) and Fresno County ordinance to comply with COC **WATER-5**. The Water Supply Assessment prepared for the project concluded that the proposed water supply would be resilient during normal, single dry, and multiple dry years (RCI 2024gg). In addition, the transition of land use from agriculture to solar power production will reduce the demand on the local aquifer. Moreover, the purpose of SGMA is to promote sustainable groundwater resources through management practices.

With incorporation of the conditions of COC **WATER-5** and **WATER-6**, as well as compliance with SGMA, the proposed water supply would adequately serve the project component.

PG&E Utility Switchyard and Downstream Network Upgrades

Water used for construction of the PG&E utility switchyard and network upgrades would be included in the 1,100 AF construction water demand for the overall project. Currently, there is no proposed water demand for operation of the PG&E utility switchyard.

g. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction– No Impact

Based on the analysis below, the project's construction would not result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demands in addition to the provider's existing community.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

Due to the rural location, no wastewater treatment provider is available to serve the

project. During construction, temporary sanitary facilities would be used. Therefore, construction of this project component would not result in a wastewater impact.

PG&E Utility Switchyard and Downstream Network Upgrades

During project construction, temporary toilet and sanitary facilities would be provided and serviced by a third-party contractor. Currently, there are no sanitary facilities proposed for PG&E utility switchyard that would require wastewater treatment.

Operation– Less Than Significant with Mitigation Incorporated

Based on the analysis below, with the implementation of COC **WATER-4**, the project's operation would not result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demands in addition to the provider's existing community. The potential impact is less than significant with mitigation.

Solar Facility, Battery Energy Storage System, O&M Facility, Step-Up Substation, and Generation-Intertie Line

The project as proposed would include a septic system to service wastewater produced by the O&M building. The soil types identified by the United States Department of Agriculture's (USDA) Web Soil Survey website in the vicinity of the O&M building (Ciero clay and Wet Ciervo complex) are noted as having a very limited rating with respect to percolation (USDA 2023). As discussed in criterion "a", the FCPWPD has the responsibility to evaluate septic system design and site conditions to ensure the proposed facility would conform with OWTS requirements and would confer with the CEC per COC **WATER-4**.

Project operation would not be expected to violate water quality standards or waste discharge requirements.

PG&E Utility Switchyard and Downstream Network Upgrades

There are no sanitary facilities proposed for PG&E utility switchyard that would require wastewater treatment; therefore, project operation would not affect wastewater capacity or violate water quality standards.

5.16.2.3 Cumulative Impacts

Construction and Operation– Less Than Significant Impact

Of the ten projects listed in the cumulative discussion under the "Environmental Setting" subsection to be evaluated for water resources, seven are solar energy projects and three are commercial projects. Unfortunately, there is no information available regarding water demand for the three commercial projects (Fresno County 2024b). However, based on Fresno County records, there is a previously approved project (APN 065-260-24S, CUP 3524), a gas station convenience store in the vicinity of the three commercial projects, that could be used as a proxy. This project had an estimated

annual water demand of 1.68 AF, and groundwater would be supplied by a public water system identified as I-5 Properties regulated by the California Department of Public Health (CDPH) (Fresno County 2016). This is minimal compared to the average water demand of local solar energy project according to available Fresno County records (Fresno County 2024b).

Based on the available information from the Fresno County Planning and Land Use Division website, water supply for the five of the seven solar energy projects (excluding Heartland Hydrogen [FC-9] and Tranquility Solar projects [FC-14]) is expected to be local groundwater (Fresno County 2024b). The operational water demand of these five projects is estimated to be between 2 AFY and 270 AFY. It should be noted that of these projects, Westlands Solar Park [WWD-1] is much larger than the others (2,000 megawatts [MWs] occupying about 21,000 acres). Operational water demand would range between 2 AFY and 20 AFY excluding the Westlands Solar Park project.

However, if project water demand is compared to historic agricultural water use on a per acre basis, the rate of solar energy project water use is much less. As noted above in environmental impact “b”, agricultural water use rate based on WWD records is 0.50 AFY/acre (WWD 2023, WWD 2025). Water use for the five solar energy projects with available data range from 0.001 AFY/acre to 0.013 AFY/acre. For reference, the water use rate for the subject project is 0.004 AFY/acre.

In addition, it should be noted that based on the environmental documents available on the Fresno County Planning and Land Use Division website (Fresno County 2024b), the SWCRB and the Central Valley RWQCB are not concerned with the water demand of several of these solar energy projects.

Moreover, implementation of SGMA with the WWD and Fresno County as the responsible GSAs, as well as Interferometric Synthetic Aperture Radar (In-SAR) monitoring of land subsidence by DWR, would act as a check on groundwater overdraft by all applicable water users in the region.

Therefore, cumulative impacts would be less than significant.

5.16.3 Jurisdictional Project Components’ Conformance with Applicable LORS

Table 5.16-1 below details staff’s determination of conformance with applicable local, state and federal laws, ordinances, regulations, and standards (LORS), including any proposed Conditions of Certification, where applicable, to ensure the jurisdictional components of the project would comply with LORS. As shown in this table, staff concludes that with implementation of specific conditions of certification, the proposed jurisdictional components of the project would be consistent with all applicable LORS. The subsection below, “Proposed Conditions of Certification,” contains the full text of the referenced conditions of certification.

TABLE 5.16-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis for Determination
Federal	
CWA, U.S. Code § 1342 (b) allows states to establish programs to issue NPDES permits.	Yes. During construction of the project, a storm water permit would be obtained under the General Construction NPDES program administered by the SWCRB and Colorado River Basin RWQCB as described in COC WATER-1 per authority granted under U.S. Code § 1342 (b).
Federal Emergency Management Agency Flood Insurance Program	Yes. The portion of the proposed project area located within special flood hazard Zone A does not include any permanent structures. Wiring to PV panels within the solar facility would be installed to comply with COC WATER 3.
State	
Sustainable Groundwater Management Act (Assembly Bill (AB) 1739, Senate Bill (SB) 1168 & SB 1319)	Yes. The water supply for construction and operation is groundwater produced from the project property per a purchase option agreement with WWD. A condition on this agreement is the project owner would comply with applicable regulations promulgated by the GSAs (Fresno County & WWD) under SGMA. The purchase option agreement would be verified per COC WATER-6.
California Well Standards, Bulletins 74-81 and 74-90: State well installation standards	Yes. Groundwater production wells would be installed in accordance with California well standards per COC WATER-5.
LAMP for OWTS	Yes. As the designated agency, the FCPWPD would evaluate if the proposed septic system conforms with SWQCB OTWS requirements per COC WATER-4.
Local	
Fresno County Ordinance: 14.04 & 14.08. Requirements for the construction well used for domestic, industrial, commercial or agricultural purposes. 15.48.080. Construction standards to reduce the impacts of flooding in FEMA special flood hazard zones.	<p>Yes. Groundwater production wells would be installed in accordance with Fresno County well standards per COC WATER-5.</p> <p>Yes. Wiring to PV panels within the solar facility would comply with COC WATER-3.</p>

5.16.4 Conclusions and Recommendations

As discussed above, with implementation of the proposed conditions of certification, the project would have a less than significant impact related to water resources and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.16.5 Proposed Conditions of Certification" below. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

Impacts associated with project components outside of CEC's jurisdiction, such as the PG&E Utility Switchyard and PG&E Downstream Network Upgrades to be considered for permitting by CPUC, require mitigation to reduce impacts to less than significant.

5.16.5 Proposed Conditions of Certification

The following proposed Conditions of Certifications include measures to ensure conformance with applicable LORS.

NPDES Construction Permit Requirements

WATER-1 The project owner shall manage stormwater pollution from project construction activities by fulfilling the requirements contained in State Water Resources Control Board's NPDES CGP for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ, NPDES No. CAS000002) and all subsequent revisions and amendments. Among the requirements of the General Permit, the project owner shall submit a Notice of Intent (NOI), file permit registration documents electronically using the Stormwater Multiple Applications and Report Tracking Systems (SMARTS), and develop and implement a construction Stormwater Pollution Prevention Plan (SWPPP) for the construction of the project. The SWPPP shall include all applicable BMPs for the project construction activities conducted in the local environment. The SWPPP must be prepared by a State-Qualified SWPPP Developer (QSD).

Verification: At least thirty (30) days prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) proof that the construction permit was granted and that a waste discharge identification number (WDID) was issued by the SWRCB. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the SWRCB or the Central Valley Regional Water Quality Control Board (CVRWQCB) concerning the CGP. This information shall include the NOI, any updates to the construction SWPPP, and the notice of termination. The project owner shall notify the CPM in writing of any reported non-compliance and include these in the annual compliance report. Any monitoring documentation associated with the SWPPP shall be included in the annual compliance report.

Operations Drainage, Erosion and Sedimentation Control Plan

WATER-2 Prior to commencing project operations, the project owner shall obtain CPM approval of a site-specific operations DESCP that addresses all project elements of stormwater management during project operations. The DESCP shall include the following:

- Discussion, site maps, plans and applicable BMPs demonstrating how stormwater and sediment erosion shall be managed during project operation.
- Final design and rationale of detention basins proposed for the 16 drainages areas.
- Discussion of BMPs deployment and materials management practices at the project site.

- Discussion and schedule of BMP inspections, storm event monitoring, and stormwater management facility maintenance.

Verification: At least thirty (30) days prior to commencement of project operation, the project owner shall submit a copy of the Operation DESC to the CPM for review and approval. The project owner shall notify the CPM in writing of any reported non-compliance instances and include these in the annual compliance report. Any monitoring documentation associated with the DESC shall be included in the annual compliance report.

Flood Hazard Reduction

WATER-3 The project owner shall ensure that installation of all electrical wiring to the PV panels within special flood hazard zones as defined on applicable FEMA FIRMs shall meet the requirements of Fresno County Flood Hazard Reduction Ordinance 15.48.080 (A)(2)(a).

Verification: No later than thirty (30) days prior to start of construction, the project owner shall submit a plan to install underground wiring to PV panels in compliance with Ordinance 15.48.080 (A)(2)(a) to the CPM for review and approval and to Fresno County for review.

Onsite Septic System Permit Requirements

WATER-4 The project owner shall install an on-site septic system designed for site-specific soil and percolation conditions. The septic system design shall comply with the SWRCB's OWTS regulations (Title 27 CCR) and FCPWPD OWTS permit requirements. The project owner shall operate the septic system following an operations and maintenance manual prepared by a qualified professional. If the site conditions are unfavorable to support a conventional leach field system, the project owner shall work with the FCPWPD and the CPM to evaluate a viable alternative.

Verification: No later than ninety (90) days prior to project operation, the project owner shall submit to the CPM evidence that the septic system design has been reviewed and commented on by FCPWPD and also has been approved by the chief building official (CBO). No later than 60 days prior to project operation, the project owner shall submit the operations and maintenance manual to the FCPWPD for review and comment. No later than 30 days prior to project operation, the project owner shall submit the operations and maintenance manual to the CPM for review and approval. The submittal shall include copies of any agency comments the project owner has received. The wastewater system shall be monitored following either the general standards adopted in SWRCB's OWTS regulations or the procedures outlined in the CPM-approved operations and maintenance manual. Any testing results or correspondence exchanged between the project owner and the California Department of Health Services or the SCEHD during operations shall be provided to the CPM in the annual

compliance report.

Groundwater Production Well Installation

WATER-5 Water for project operational use shall be groundwater produced from well(s) to be installed adjacent to the proposed O&M facility. The project owner shall apply for a well installation permit from the FCPWPD. The groundwater production well(s) shall be installed and constructed per applicable California Water Code section, as well as DWR standards presented in bulletins 74-81 and 74-90, as well as applicable FCPWPD well installation requirements.

Verification: At a frequency determined by the CPM, the project owner shall keep the CPM apprised of all aspects of production well installation. The project owner shall provide the CPM with a copy of the well installation permit. The project owner shall file a well completion report to DWR for the extraction well. Any testing results or correspondence exchanged between the project owner and the California Department of Health Services or the FCPWPD during operations shall be provided to the CPM in the annual compliance report. All results and diagrams associated with groundwater production well installation shall be included in the annual compliance report.

Water Use and Reporting

WATER-6 Water supply for project construction and operation shall be groundwater beneath the project property by benefit of the purchase option agreement with the WWD. The project owner shall provide the CPM with a copy of the WWD purchase option agreement after conclusion. Water use during construction shall not exceed 1,200 AF and operational water use shall be limited to a maximum of 40 AFY. The project owner shall record daily water use for the project construction and operation.

Verification: During project construction, the monthly compliance report shall include a summary of monthly water use. The project's annual compliance report shall include a monthly and annual summary of water use identifying construction or operations and water source.

5.16.6 Recommended Mitigation Measures

For the non-jurisdictional components of the project, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations (CCR), title 14, section 15091(a)(2).

MM WATER-1 The project owner must manage stormwater pollution from project construction activities by fulfilling the requirements contained in State Water Resources Control Board's NPDES CGP for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2022-0057-DWQ,

NPDES No. CAS000002) and all subsequent revisions and amendments. Among the requirements of the CGP, the project owner shall submit an NOI and file permit registration documents electronically using SMARTS, and develop and implement a construction SWPPP for the construction of the project (Construction SWPPP). The SWPPP shall include all applicable BMPs for the project construction activities conducted in the local environment.

MM WATER-2 Prior to commencing project operations, the project owner must prepare a site-specific operations DESCP that addresses all project elements of stormwater management during project operations. The DESCP shall include the following:

- Discussion, site maps, plans and applicable BMPs demonstrating how stormwater and sediment erosion shall be managed during project operation.
- Final design and rational of detention basins proposed for the 16 drainages areas.
- Discussion of BMPs deployment and materials management practices at the project site.
- Discussion and schedule of BMP inspections, storm event monitoring, and stormwater management structure maintenance.

5.16.7 References

Croft 1972 – Croft, M.G. Subsurface Geology of the Late Tertiary and Quaternary Water-Bearing Deposits of the Southern Part of the San Joaquin Valley, California. United States Geological Survey (USGS), Water Supply Paper 1999-H, scale 1:250,000. 1972. Available online at: <https://pubs.usgs.gov/publication/wsp1999H>

CBI 2024 – Conservation Biology Institute (CBI). Data Basin, Extent of Corcoran Clay website. Available online at: <https://databasin.org/datasets/f9f1f37a23ca49caba008a200fff89e6/>

DWR 1981 – Department of Water Resources (DWR). Water Well Standards: State of California Bulletin 74-81. Dated December 1981. Available online at: https://www.countyofglenn.net/sites/default/files/Environmental_Health/WP_DWR_Bulletin_74-81.pdf

DWR 1991 – Department of Water Resources (DWR). California Well Standards, Water Wells, Monitoring Wells, Cathodic Protection Wells, Bulletin 74-90 (Supplement to Bulletin 74-81). Dated June 1991. Available online at: <https://archive.org/details/protectwellst7490calirich>

DWR 2006 – Department of Water Resources (DWR). California's Groundwater, Bulletin 118, Update 2003, Basin Report 5_022_09. Updated January 20, 2006. Available online at: <https://data.cnra.ca.gov/dataset/bulletin-118-update-2003-basin-reports/resource/e5529385-f67a-4006-8f66-d1daa9e6753e>

- DWR 2020 – Department of Water Resources (DWR). SGMA Basin Prioritization Dashboard. Last updated March 13, 2020. Available online at: <https://gis.water.ca.gov/app/bp-dashboard/final/hgxc>
- DWR 2024 – Department of Water Resources (DWR). Water Management Boundary Tool. Last updated April 11, 2024. Available online at: <https://gis.water.ca.gov/app/boundaries/>
- DWR 2025a – Department of Water Resources (DWR). Dam Breach Inundation Map Web Publisher. Last updated January 9, 2025. Available online at: https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2
- DWR 2025b – California Department of Water Resources (DWR). Sustainable Groundwater Management Act (SGMA) Data Viewer. Last updated January 9, 2025. Available online at: <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub>
- FEMA 2009a – Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map (FIRM), Fresno County, California, and Incorporated Areas, Panel 2550 of 3525. Map No. 06019C22550H, revised February 18, 2009. Available online at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-121.9026729380225,37.39865747819159,-121.88739507547326,37.40718029041653>
- FEMA 2009b – Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map (FIRM), Fresno County, California, and Incorporated Areas, Panel 2775 of 3525. Map No. 06019C2775H, revised February 18, 2009. Available online at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-121.9026729380225,37.39865747819159,-121.88739507547326,37.40718029041653>
- FEMA 2009c – Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map (FIRM), Fresno County, California, and Incorporated Areas, Panel 2825 of 3525. Map No. 06019C22825H. Revised February 18, 2009. Available online at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-121.9026729380225,37.39865747819159,-121.88739507547326,37.40718029041653>
- FEMA 2024 – Federal Emergency Management Agency (FEMA). FEMA’s National Flood Hazard Layer (NFHL) Viewer. Last updated November 12, 2024. Available online at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-121.9026729380225,37.39865747819159,-121.88739507547326,37.40718029041653>
- Fresno County 2016 – Fresno County Department of Public Works and Planning (Fresno County). Planning Commission Staff Report Agenda Item No. 2, August 25, 2016. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/64409-cup3524-sr.pdf>
- Fresno County 2019 – Fresno County Public Works and Planning Department (Fresno

- County). Fresno County, Local Area Management Program. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/39300-fresno-county-lamp-2019.pdf>
- Fresno County 2024a – Fresno County Department of Public Works and Planning Division (Fresno County). Fresno County General Plan Policy Document, Comprehensive General Plan Review and Revision. Final February 2004. Available online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- Fresno County 2024b – Fresno County Planning and Land Use Division (Fresno County). Environmental Impact Reports, EIR 8575 Rosemary Solar. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports/eir-8575-Rosemary-Solar>
- Fresno County 2024c – County of Fresno (Fresno County). County of Fresno – GIS Portal - Zoning Unincorporated Accessed on: November 19, 2024. Available online at: <https://gisportal.co.fresno.ca.us/portal/apps/webappviewer/index.html?id=b921843d343d4df998b5b3c6a301756a>
- IP 2025e – Intersect Power (TN 261662). Preliminary Stormwater Management Report. Dated February 10, 2025. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- IP 2024n – Intersect Power (IP). (TN 260642). Updated Project Description December 2024. Dated December 13, 2024. Available online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- Ireland, Poland and Riley 1984 - Ireland R.L., Poland, J.F. and Riley, F.S. (Ireland, Poland and Riely) Land subsidence in the San Joaquin Valley, California, as of 1980. U.S. Geological Survey Professional Paper 437-1. Available online: <http://pubs.er.usgs.gov/publication/pp437I>
- Luhdorff & Scalmanini 2022 - Luhdorff & Scalmanini Consulting Engineers (Luhdorff & Scalmanini). Westside Subbasin, Groundwater Sustainability Plan. Prepared for Westlands Water District GSA and Fresno County GSA-Westside. July 2022. Available online at: <https://sgma.water.ca.gov/portal/gsp/preview/8>
- NOAA 2024 – National Oceanic and Atmospheric Administration (NOAA). Digital Coast, Sea Level Rise Viewer. Updated on December 4, 2024. Available online at: <https://coast.noaa.gov/slr/#/layer/slr/10/13581756.874679431/4498150.719796521/13/satellite/none/0.8/2050/interHigh/midAccretion>
- Page 1986 – Page, R.W. (Page 1986). Geology of the fresh ground-water basin of the Central Valley, California, with texture maps and sections. U.S. Geological Survey Professional Paper 1401-C. Available online at: <https://pubs.usgs.gov/publication/pp1401C>
- RCI 2023c – Rincon Consultants, Inc. (TN 252920). Appendix F Project Design Layout

- and Elevations. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023j – Rincon Consultants, Inc. (TN 252931). Chapter 5 Environmental Analysis. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023ff – Rincon Consultants, Inc. (TN 252985). Chapter 2 Project Description. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023gg – Rincon Consultants, Inc. (TN 253020). Appendix S Water Supply Assessment. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023oo – Rincon Consultants, Inc. (TN 253035). Section 5-13 Water Resources. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023rr – Rincon Consultants, Inc. (TN 253038-1 through TN 253038-3). Appendix Q Biological Resources Assessment. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024u – Rincon Consultants, Inc. (TN 256296). Data Request Response Set 4. Dated May 10, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024ww – Rincon Consultants, Inc. (TN 260662). CEC Supplemental Data Request Response Set 1. Dated December 13, 2024. Available online at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- SEIA 2025 – Solar Energy Industries Association (SEIA). Water Use Management website. Available online at: <https://seia.org/water-use-management/>
- USDA 2025 – United States Department of Agriculture (USDA). USDA, Natural Resources Conservation Service (NRCS) Web Soil Survey. Last updated January 10, 2025. Available online at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
- USDOJ & WWD 2015 – U.S. Department of Justice and Westlands Water District (USDOJ & WWD). Agreement Between the United States and Westlands Water District. September 2015. Available online at: <https://wwd.ca.gov/resource-management/drainage/drainage-settlement-documents/>
- USEPA 2024 – United States Environmental Protection Agency (USEPA). How's My Waterway? Last updated on December 11, 2024. Available online at: <https://mywaterway.epa.gov/state/CA/water-quality-overview>
- USGS 2024 - U.S. Geological Survey (USGS). Central Valley: Drought Indicators, Subsidence Data. Last updated on January 13, 2025. Available online at: https://ca.water.usgs.gov/land_subsidence/central-valley-subsidence-data.html

WWD 2023 – Westlands Water District (WWD). 2023, Westlands Water District, Water Management Plan (5 Year Update). Available online at:
<https://wwd.ca.gov/water-management/additional-water-management/water-management-plan/>

WWD 2025 – Westlands Water District (WWD). Westlands Water District, Water Supply Website. Last updated on January 9, 2025. Available online at: <https://wwd.ca.gov/water-management/water-supply/>

Section 6

Environmental Justice

6 Environmental Justice

6.1 Environmental Setting and Regulatory Background

The proposed Darden Clean Energy Project (DCEP or project) would be located on approximately 9,500 acres of unincorporated agricultural land, that would be permanently retired for irrigated farming, in Fresno County to the south of the town of Cantua Creek. As part of a settlement between Westlands Water District (WWD) and the U.S. Department of Justice (USDOJ), WWD will permanently retire 100,000 acres from irrigation and transfer use to non-irrigable applications, such as renewable energy projects (see **Section 5.16, Water Resources**).

Issued in 1994, President Clinton's Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," focused federal attention on the environment and human health conditions of minority communities and calls on federal agencies to achieve environmental justice (EJ) as part of their mission (U.S. EPA 2015). The order requires all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address EJ. Federal agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations (Federal Register 1994).

Issued in April 2023, President Biden's EO 14096, "Revitalizing Our Nation's Commitment to Environmental Justice for All," amended EO 12898 to better protect overburdened communities from pollution and environmental harm by directing agencies to identify, analyze, and address federal activities including disproportionate and adverse human health and environmental effects; historic inequalities, systemic barriers, or actions that impair achievement of health; and barriers that impair communities to receive equitable access to human health or environmental benefits. EO 14096 provides opportunities for engagement with communities by directing agencies to actively facilitate meaningful public participation and just treatment of all people in agency decision-making (Federal Register 2023).

California law defines environmental justice as "the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12). In keeping with its commitment to environmental sustainability and access to all, California was one of the first states to codify the concept of EJ in its statutes.

Beyond the fair treatment principles described in statute, the California Energy Commission (CEC) considers environmental justice during its staff assessment process. CEC has included EJ analyses in its environmental review of power plant siting cases for over two decades. CEC's goal is to ensure, through equal access to the decision-making process, everyone has equal protection from environmental and health hazards and can live, learn, play, and work in a healthy environment.

Environmental Justice in the Energy Commission Siting Process

As described above, an EJ analysis is part of the CEC's site certification process. CEC uses the California Environmental Protection Agency's (CalEPA) California Communities Environmental Health Screening Tool (CalEnviroScreen (CES)) in addition to U.S. Census data to identify minority and/or low-income populations (i.e., an EJ population), also referred to as a disadvantaged community by CES (CalEPA 2021). The "Environmental Justice Project Screening" subsection below presents the demographic data for those people living in a 6-mile radius of the proposed project site and a determination of presence or absence of an EJ population. When an EJ population is identified, the analyses in nine technical areas¹ consider the project's impacts on this population and if those impacts would disproportionately affect the EJ population. The "Project Outreach" subsection below discusses the CEC's outreach program specifically as it relates to the proposed project.

CEC staff typically conduct EJ analysis by taking the following steps:

- Identification of a population of minority persons and/or persons with low income (i.e., disadvantaged community) living in an area potentially affected by the proposed project;
- Providing notice in appropriate languages (when possible) of the proposed project and opportunities for participation in public workshops for disadvantaged communities;
- Identification of areas potentially affected by various project-related emissions (e.g., air quality, Greenhouse gases (GHG), hazardous materials, etc.) or other project-related nuisance effects (e.g., noise, traffic, etc.); and
- A determination of the potential for a significant adverse disproportionate impact on an identified EJ population resulting from the proposed project alone, or in combination with other existing and/or planned projects in the area (i.e., from cumulative impacts).

San Joaquin Valley Air Basin Community Health Programs

The project site is located within the San Joaquin Valley Air Basin (SJVAB or Air Basin). The statewide Community Air Protection Program (CAPP) requires the California Air Resources Board (CARB) to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health and to take measures to protect communities disproportionately impacted by air pollution. CARB is required to select the highest priority locations in the state for the deployment of community air monitoring systems and select locations around the state for the

¹ The nine technical areas are Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials and Wildfire; Water Resources; Noise and Vibration; Public Health; Solid Waste Management; Transportation; and Visual Resources. Cultural and Tribal Cultural Resources considers impacts to Native American populations.

preparation of community emissions reduction programs. CARB's governing board has selected 17 communities (Assembly Bill (AB) 617 communities) for a community emissions reduction program (CARB 2023). The project site is not located in an AB 617 community.

CalEnviroScreen

Staff utilize CalEnviroScreen (CES) to identify disadvantaged communities to better understand the demographic characteristics of areas where a project impact would occur. The use of CES data outputs ensures that disadvantaged communities in the vicinity of the proposed project have not been missed when screened by race/ethnicity and low income.

In 2012, CalEPA developed CES as a science-based mapping tool that provides an objective method for evaluating multiple pollutants and stressors in local communities, and ultimately for identifying disadvantaged communities pursuant to Health and Safety Code section 39711 as enacted by Senate Bill (SB) 535 (De León, Stats. 2012 Ch. 830). CalEPA released an updated designation for disadvantaged communities² in May 2022 for the purposes of SB 535. As required by State law, disadvantaged communities are identified based on geographic, socioeconomic, public health, and environmental hazard criteria. CES identifies impacted communities by considering pollution exposure and its effects, as well as health and socioeconomic status, at the Census-tract level (OEHHA 2021, pg. 8).

The CES model incorporates 21 indicators that measure a community's exposure, environmental effects, sensitive population, and socioeconomic factors. Indicators for exposure and environmental effects comprise a Pollution Burden group, and indicators for sensitive populations and socioeconomic factors comprise a Population Characteristics group.

Table 6-1 lists the indicators that go into the Pollution Burden score and the Population Characteristics score to form the final CES score. These indicators are used to measure factors that affect the potential for pollution impacts in communities.

² The California Environmental Protection Agency (CalEPA), for purposes of its Cap-and-Trade Program, defines communities in terms of census tracts and identifies four types of geographic areas as disadvantaged: (1) census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen (CES) 4.0; (2) census tracts lacking overall scores in CES 4.0 due to data gaps, but receiving the highest 5 percent of CES 4.0 cumulative pollution burden scores; (3) Census tracts identified in the 2017 DAC (disadvantaged community) designation as disadvantaged, regardless of their scores in CES 4.0; (4) and areas under the control of federally recognized Tribes (CalEPA 2022).

TABLE 6-1 COMPONENTS THAT FORM THE CALENVIROSCREEN (CES) 4.0 SCORE

Pollution Burden	
Exposure Indicators	Environmental Effects Indicators
Children's lead risk from housing	Cleanup sites
Diesel particulate matter (PM) emissions	Groundwater threats
Drinking water contaminants	Hazardous waste
Ozone concentrations	Impaired water bodies
PM 2.5 concentrations	Solid waste sites and facilities
Pesticide use	
Toxic releases from facilities	
Traffic density	
Population Characteristics	
Sensitive Populations Indicators	Socioeconomic Factors Indicators
Asthma emergency department visits	Educational attainment
Cardiovascular disease (emergency department visits for heart attacks)	Housing-burdened low-income households
Low birth-weight infants	Linguistic isolation
	Poverty
	Unemployment

Notes: PM = particulate matter. PM 2.5 = fine particulate matter 2.5 microns or less.

Source: OEHHA 2021

The CES model uses U.S. Census tract data as a geographic scale for identifying disadvantaged communities within California. For each Census tract, CES calculates an overall score by combining the individual indicator scores within each of the two groups (i.e., Pollution Burden and Population Characteristics), then multiplying the Pollution Burden and Population Characteristics scores to produce a final score:

$$[\text{Pollution Burden}] \times [\text{Population Characteristics}] = \text{CES Score}$$

- **Pollution Burden Score.** Pollution Burden scores for each U.S. Census tract are derived from the average percentiles of the eight exposures indicators (ozone and PM2.5 concentrations, diesel PM emissions, drinking water contaminants, children's lead risk from housing, pesticide use, toxic releases from facilities, and traffic impacts) and the five environmental effects indicators (cleanup sites, impaired water bodies, groundwater threats, hazardous waste facilities and generators, and solid waste sites and facilities). Indicators from the environmental effects component are given half the weight of the indicators from the exposures component. The calculated average Pollution Burden score (average of the indicators) is divided by 10 and rounded to one decimal place for a Pollution Burden score ranging from 0.1 to 10.
- **Population Characteristics Score.** Population Characteristics scores for each U.S. Census tract are derived from the average percentiles for the three sensitive populations indicators (cardiovascular disease, low birth weight infants, and asthma) and the five socioeconomic factors indicators (educational attainment, linguistic isolation, housing burden, unemployment, and poverty). The calculated average

percentile is divided by 10 for a Population Characteristic score ranging from 0.1 to 10.

Since both the Pollution Burden and Populations Characteristics provide a maximum score of 10, the maximum CES Score is 100. Based on these scores, Census tracts across California are ranked relative to one another. The indicator values for the Census tracts for the entire state are ordered from highest to lowest. A percentile is calculated from the ordered values for all areas that have a score. A higher percentile indicates a higher potential relative burden. A percentile does not describe the magnitude of the difference between two tracts, but rather it simply tells the percentage of tracts with lower values for that indicator (OEHHA 2021, pg. 20). Census tracts receiving the highest 25 percent of overall scores in CES 4.0 are considered disadvantaged (CalEPA 2022a).

CEC staff assess project effects on low-income and/or high-minority populations by reviewing CES indicators (see **Table 6-1**) as they relate to specific technical issues being analyzed. The project-specific Census tracts identified by CES as disadvantaged incorporates analyses by CEC technical analysts (Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials and Wildfire; Water Resources; Noise and Vibration; Public Health; Solid Waste Management; Transportation; and Visual Resources) to determine if any disproportionate burdens would be borne by EJ populations.

Project Outreach

In California, SB 1000 (Leyva, Chapter 587, Statutes of 2016) was enacted to require local governments with disadvantaged communities, as defined in statute, to incorporate EJ into their general plans when two or more general plan elements (sections) are updated. The Governor's Office of Land Use and Climate Innovation worked with State agencies, local governments, and many partners to update the General Plan Guidelines in 2020 to include guidance for communities on EJ (LCI 2020). This law has several purposes, including facilitating transparency and public engagement in local governments' planning and decision-making processes, reduce harmful pollutants and the associated health risks in EJ communities, and promote equitable access to health-inducing benefits, such as healthy food options, housing, public facilities, and recreation.

Meaningful involvement is an important part of the siting process and occurs when:

- Those whose environment or health would be potentially affected by the decision on the proposed activity have an appropriate opportunity to participate in the decision;
- The population's contribution can influence the decision; and
- The concerns of all participants involved are considered in the decision-making process.

CEC staff and the Office of the Public Advisor, Energy Equity, and Tribal Affairs (PAO+) coordinated closely on public outreach early in the review process. The PAO+ outreach consisted of email outreach to elected officials, California Native American tribes, community and other organizations, businesses, schools, labor unions and trade associations, community centers, local residents, and others that had previously expressed interest in being informed of proposed project review and other activities through County events, outreach, and engagement.

Consistent with the California Code of Regulations (CCR), Title 14, Section 15082 and Public Resources Code Chapter 6.2, Section 25545.7.2(a), staff issued a Notice of Preparation of a Draft Environmental Impact Report (EIR) on September 23, 2024, filing it with the Office of Land Use and Climate Innovation (formally Office of Planning and Research) (State Clearinghouse), responsible and trustee agencies, and the Fresno County Clerk. The mailing list used to engage with stakeholder agencies can be found in **Appendix B**.

In accordance with the Governor's EO B-10-11, the CEC's Tribal Consultation Policy, the CEC's Siting Regulations, and amendments to the California Environmental Quality Act (CEQA) (i.e., AB 52), staff conducted outreach and consultation with regional tribal governments. Additional information regarding the outreach efforts and specific groups contacted can be found in **Section 5.4, Cultural and Tribal Cultural Resources**.

As described in **Section 2, Introduction**, consistent with the noticing requirements under CEQA Guidelines Section 15087 staff mailed the Notice of Availability of the staff assessment to all owners and occupants contiguous to the project site, including to property owners within 1,000 feet of project site and 500 feet of project linear facilities using the list of assessor parcel numbers and owners submitted as required by CCR, Title 20, Appendix B (a) (1) (E).

Environmental Justice Project Screening

To consider EJ concerns, the CEC staff has historically used a 6-mile radius surrounding the project site based on the potential distance of air pollution emissions. Staff retained the 6-mile distance due to the rural nature of the area with few residences close by and the expansive size of the project site. **Figure 6-1** presents the location of the project site and the 2020 U.S. Census tract boundaries contained within a 6-mile radius.

Tables 6-2 and 6-3 present income and race data of the regional and 6-mile radius area surrounding the project site. The socioeconomic data source is U.S. Census Bureau's American Community Survey (ACS) 2017-2021 5-Year Estimates US Census Bureau 2021). Because ACS estimates come from a sample population, a certain level of variability is associated with the estimates. For purposes of this analysis, U.S. Census ACS data was used to provide current data, consistency between the data used to identify minority and low-income populations, and consistency between the different geographies presented. The 2017-2022 ACS data uses the 2020 U.S. Census tract boundaries shown in **Figure 6-1**. For these reasons, U.S. Census ACS data is

considered best available for representing the demographic makeup of affected communities in the project area. Use of published U.S. Census ACS data estimates is commonly used by CEQA Lead Agencies when performing analysis.

As shown in **Table 6-2**, five of the six census tracts within the 6-mile area contain a low-income population greater than the percentage of persons with a low-income in the comparative geography of Fresno County.

TABLE 6-2 INCOME STATISTICS FOR FRESNO COUNTY AND PROJECT 6-MILE RADIUS

Geography	Total Population (whose poverty status is known)	People with Ratio of Income to Poverty 2.0 and under	Percent Low-Income
Fresno County	1,008,280	191,573	19
6019003900*	4,775	1,146	24
6019007600*	3,795	759	20
6019007802**	4,489	1,750	39
6019007902*	7,406	4,273	57.7
6019008200	5,946	1,070	18
6019008302*	7,406	4,273	57.7

Notes: Low-income population is defined when the percent of a population (i.e., in a county or Census tract) in households is less than or equal to twice the poverty level. This definition is consistent with federal tools EJ Screen and the Climate and Economic Justice Screening Tool (CEJ, 2024; US EPA, 2015).

*Tracts in bold denote percentages higher than the total percentage for Fresno County.

**Census Tracts 6019007902 and 6019008302 are considered by the State of California as 'Hard to Count' index tracts, meaning that the tracts have demographics, socioeconomic and housing characteristics that are difficult to enumerate. Data used for these tracts was compiled from multiple block groups within the ACS survey.

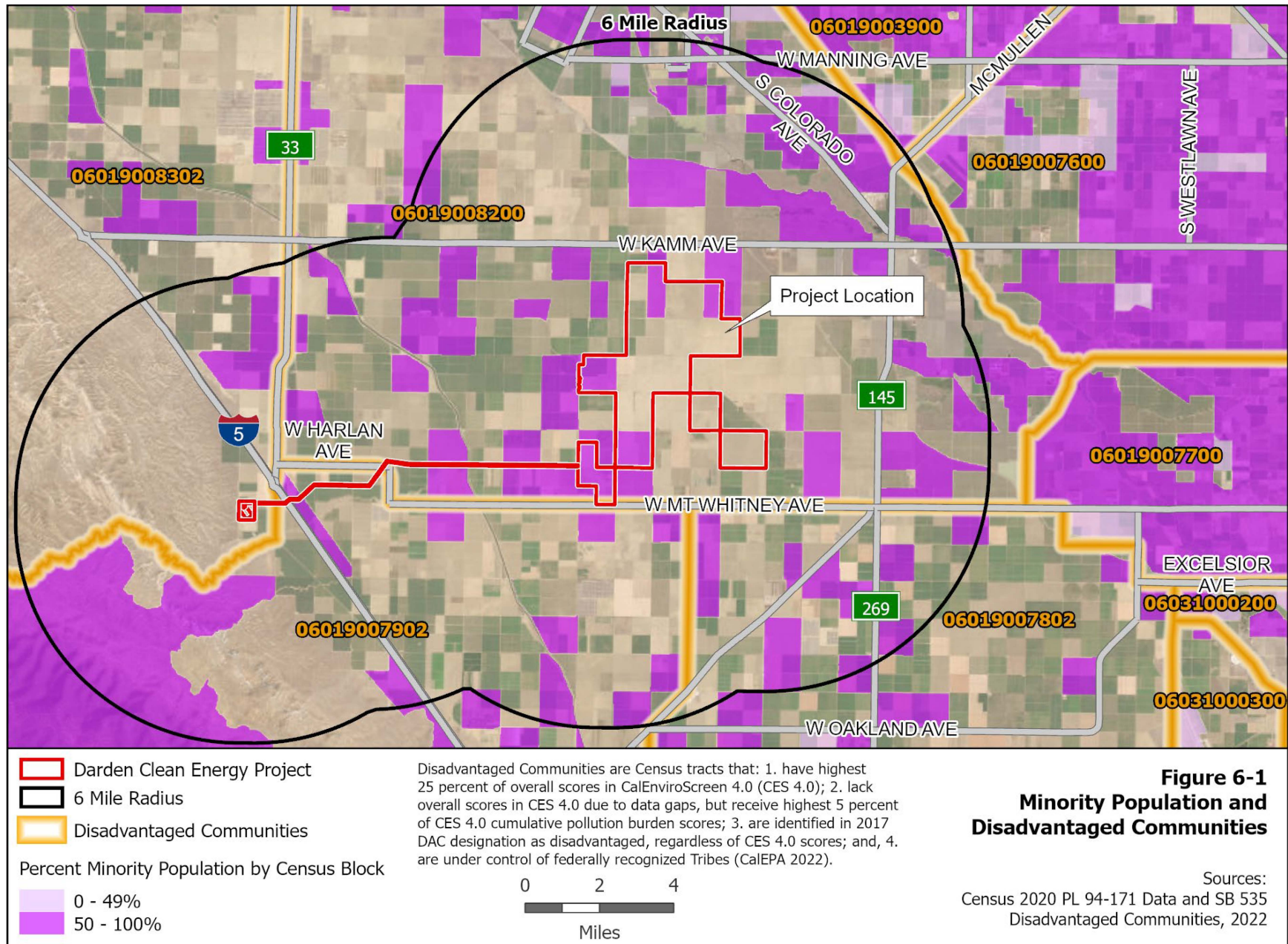
Source: US Census 2021 and EJ Screen Community Report, 2024

Table 6-3 shows that all six census tracts contain a minority population that is greater than the minority population of Fresno County. Based on the data presented in **Tables 6-2** and **6-3**, an EJ population is present in the project area.

TABLE 6-3 RACE STATISTICS FOR FRENDO COUNTY AND TRACTS WITHIN 6 MILES OF PROJECT

Geography	Total Population	People of Color	Percent People of Color
Fresno County	1,008,280	736,044	73
6019003900*	4,775	3,629	76
6019007600*	3,795	2,922	77
6019007802*	4,489	4,309	96
6019007902**	7,406	7,265	98.1
6019008200*	5,946	5,708	96
6019008302**	7,406	7,265	98.1

Source: CEJ, 2024; US EPA, 2015



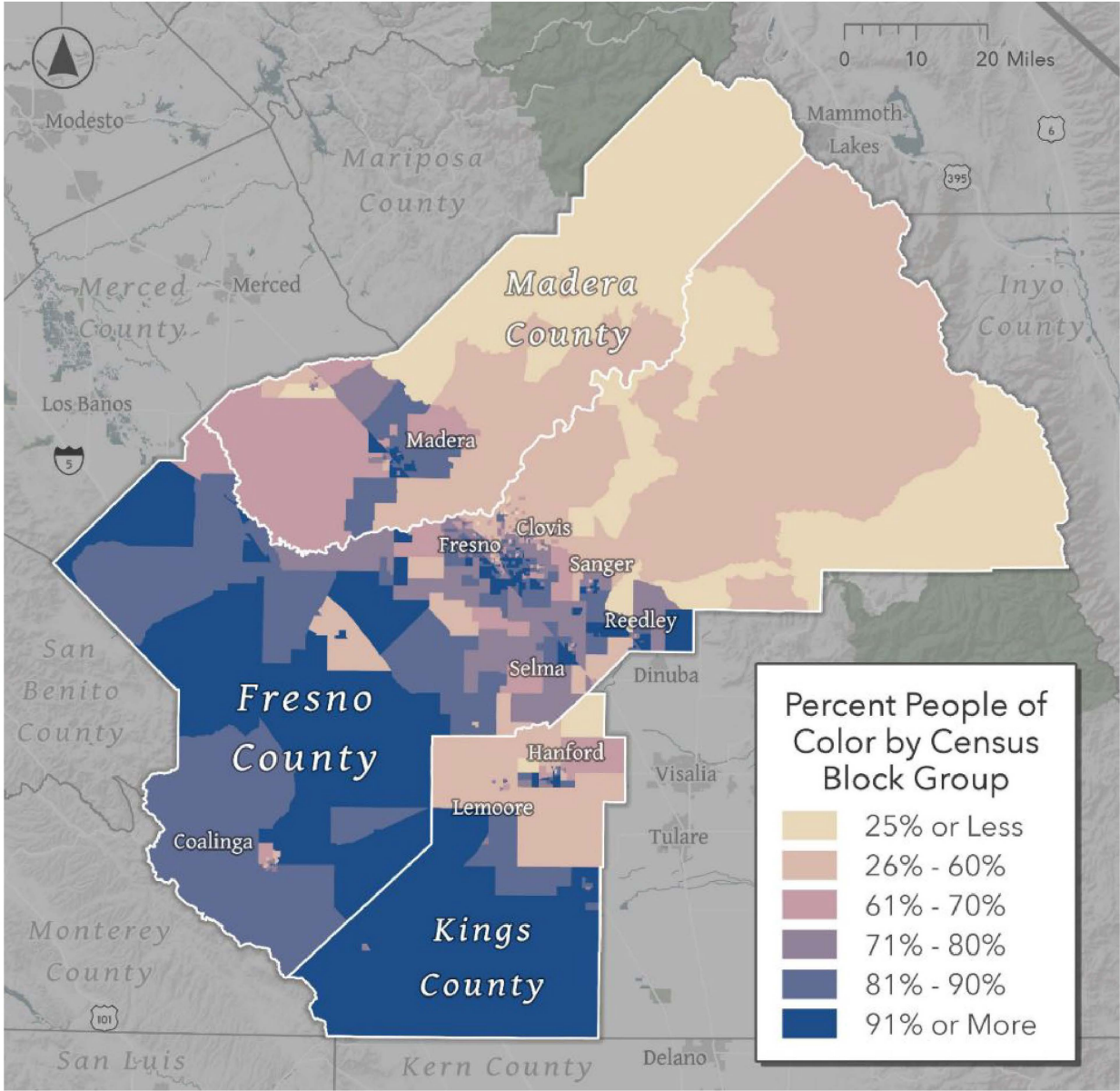


Figure 6-2
Racial and Ethnic Makeup of Fresno, Madera, and Kings Counties

Sources: RCI 2023qq

CalEnviroScreen. CalEnviroScreen (CES) 4.0 was used to gather additional information about the population potentially impacted by the project. The CES indicators (**Table 6-1**) are used to measure factors that affect the potential³ for pollution impacts in the EJ communities. Staff used CES 4.0 to identify if additional disadvantage communities⁴ were in the vicinity of the project and better understand the characteristics of the areas where impacts would occur.

Tables 6-4 through **6-7** present the CES overall scores and indicators for the Census tracts within a 6-mile radius of the project site. It must be noted that CES uses 2010 Census tracts, which are different from the updated Census tracts used in **Tables 6-2** and **6-3**.

As shown in **Table 6-4**, the population within the study area has a greater percentage of Hispanic people and a greater percentage of American Indian/Alaska Native people than the percentage of those ethnicities statewide. In Fresno County, which contains the 6-mile study area, the percentage of African American people is slightly smaller (4.6 percent) compared to the percentage statewide (5.6 percent) (CA Department of Finance 2023).

Communities of racially and ethnically diverse populations are prevalent throughout the study area (see **Figure 6-2**), with a comparatively greater percentage of racially and ethnically diverse populations in western Fresno County as compared to more densely populated areas within Fresno and Madera counties. This is considerably less than in the urban areas of the Fresno-Madera metropolitan statistical area (MSA), meaning fewer people overall live in the large census tracts in the western part of the county shown in **Figure 6-2**.

³ It is important to note that CES is not an expression of health risk and does not provide quantitative information on increases of impacts for specific sites or projects. CES uses the criteria of “proximity” to a hazardous waste site, a leaking underground tank, contaminated soil, an emission stack (industry, power plant, etc.) to determine that a population is “impacted.” It does not address general principles of toxicology: dose/response and exposure pathways. For certain toxic chemicals to pose a risk to the public, offsite migration pathways must exist (through ingestion, inhalation, dermal contact, etc.) and contact to a certain amount – not just any amount – must exist.

⁴ The CalEPA, for purposes of its Cap-and-Trade Program, defines communities in terms of census tracts and identifies four types of geographic areas as disadvantaged: (1) census tracts receiving the highest 25 percent of overall scores in CES 4.0; (2) census tracts lacking overall scores in CES 4.0 due to data gaps, but receiving the highest 5 percent of CES 4.0 cumulative pollution burden scores; (3) census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CES 4.0; (4) and areas under the control of federally recognized Tribes. (CalEPA 2022).

TABLE 6-4 RACE AND ETHNICITY, 2022

	Fresno County	Madera County	Kings County	California
Total Population	1,012,350	157,382	151,337	39,028,571
White (non-Hispanic)	27.3%	31.7%	29.9%	35.3%
Black	4.6%	3.0%	6.2%	5.6%
American Indian/Alaska Native	0.6%	1.0%	0.9%	0.4%
Hispanic (any race)	54.6%	60.3%	56.7%	40.0%

Sources: CEQ, 2024; US EPA, 2015

Table 6-5 presents the total population for each Census tract in the six-mile area surrounding the project, and their associated pollution and population burdens. Both the CES Score and percentile are presented. **Tables 6-6** and **6-7** present the data used to calculate the score.

Five of the six Census tracts within six miles of the project site are considered disadvantaged communities under the CalEPA designation of disadvantaged communities for the purpose of SB 535. With the exception of Census tract no. 6019003900, the CES 4.0 scores were associated with the 75th percentile or higher, indicating that they were in the highest 25 percent of the overall scores in CES 4.0, which is based on 2010 U.S. Census tract data. As shown in **Table 6-7**, the same five counties have a greater percentage of low-income households that are below the poverty level than the percentage for Fresno County as a whole and coincides with U.S. Census ACS 2017-2021 data presented in **Table 6-2**.

TABLE 6-5 CALENVIROSCREEN (CES) OVERALL SCORES FOR CENSUS TRACTS WITHIN A 6-MILE RADIUS

Census Tract No.	Total Population	Pollution Burden Percentile	Population Characteristics Percentile	CES 4.0 Score	CES 4.0 Percentile
6019003900	6,477	88	53	38	72
6019007600	4,273	83	80	49	86
6019007802	5,354	69	87	47	85
6019007902	2,952	70	71	40	75
6019008200	6,768	76	79	46	83
6019008302	7,406	57	95	47	85

Note: A percentile is calculated from the ordered values for all areas that have a score. Each area's percentile rank for a specific indicator is relative to the rank for that indicator in the rest of the state (OEHHA, 2021)

Source: CalEnvironScreen, 2024

TABLE 6-6 CALENVIROSCREEN (CES) INDICATOR PERCENTILES FOR POLLUTION BURDEN FOR CENSUS TRACTS WITHIN A 6-MILE RADIUS

Census Tract No.	Percentiles													
	Pollution Burden	Ozone	PM 2.5	Diesel PM	Drinking Water	Lead	Pesticides	Toxic Release	Traffic	Clean-up Sites	Groundwater Threats	Hazardous Waste	Impaired Water Bodies	Solid Waste
6019003900	88	72	67	23	100	71	95	50	4	0	94	17	59	98
6019007600	83	77	86	23	100	78	96	51	2	0	93	17	12	64
6019007802	69	75	51	20	63	62	97	30	3	90	93	95	44	59
6019007902	70	57	24	2	68	25	84	27	7	90	93	95	44	59
6019008200	76	72	50	10	78	70	90	28	1	53	85	69	44	36
6019008302	57	63	38	15	75	78	87	18	10	58	72	7	59	0

Notes: PM – Particulate matter; PM 2.5 – Particulate matter with a diameter of 2.5 microns or less

Source: CES, 2024

TABLE 6-7 CALENVIROSCREEN (CES) INDICATOR PERCENTILES FOR POPULATION CHARACTERISTICS FOR CENSUS TRACTS WITHIN A 6-MILE RADIUS

Census Tract No.	Percentiles								
	Population Characteristics	Asthma	Low Birth Weight	Cardiovascular Disease	Education	Linguistic Isolation	Poverty	Unemployment	Housing Burden
6019003900	53	69	14	62	91	72	74	28	12
6019007600	80	88	49	67	89	62	87	83	36
6019007802	87	58	17	89	11	99	100	96	86
6019007902	71	69	28	87	94	64	79	89	3
6019008200	79	50	46	72	99	99	95	85	32
6019008302	95	88	67	58	100	100	100	100	78

Note: A percentile is calculated from the ordered values for all areas that have a score. Each area's percentile rank for a specific indicator is relative to the rank for that indicator in the rest of the state (OEHHA, 2021).

Source: CES, 2024

Fresno County General Plan

The Fresno County General Plan includes an EJ element that identifies the locations of EJ communities throughout Fresno County using CES 4.0 criteria and data. The EJ element presents goals, policies, and measures to ensure that all people have an equal ability to participate in the decision-making process and to “ensure the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies do not disproportionately impact any individual race, any culture, income or education level” (County of Fresno, 2024).

Table 6-8 identifies the policies presented in the EJ element that apply to the proposed project and describes the project’s conformance with these policies based on the analysis provided in earlier sections. The “6.2 Environmental Impacts” subsection below provides a more detailed environmental justice analysis to support these conclusions.

TABLE 6-8 SUMMARY OF FRESNO COUNTY GENERAL PLAN EJ POLICIES AND PROJECT CONFORMANCE

Applicable Policy	Conformance and Basis for Determination
<p>LU-F.30. The County may approve rezoning requests and discretionary permits for new industrial development or expansion of existing industrial uses subject to conditions concerning the following criteria or other conditions adopted by the Board of Supervisors:</p> <ul style="list-style-type: none"> a. Operational measures or specialized equipment to protect public health, safety, and welfare, and to reduce adverse impacts of noise, odor, vibration, smoke, noxious gases, heat and glare, dust and dirt, combustibles, and other pollutants on abutting properties. b. Provisions for adequate off-street parking to handle maximum number of company vehicles, salespersons, and customers/visitors. c. Mandatory maintenance of non-objectionable use areas adjacent to or surrounding the use in order to isolate the use from abutting properties. d. Limitations on the industry's size, time of operation, or length of permit. e. Compliance with the Environmental Justice Element policies for proposals in proximity to sensitive receptors and/or disadvantaged communities. 	<p>Yes. CEC concluded that the project is consistent with policy LU-F.30 based on the following:</p> <ul style="list-style-type: none"> a. As described in Section 3, Project Description, the project would include 50-foot buffers between proposed project structures and nearest sensitive receptors, and a 275-foot easement would accommodate the generation-intertie line. Staff’s proposed COCs would be implemented during project operation to protect public health, safety, and welfare and combustibles to less than significant; COCs WORKER SAFETY-1 to WORKER SAFETY-12, as presented in Section 4.4, Worker Safety and Fire Protection and COCs HAZ 1 to HAZ-9 as presented in Section 5.7 Hazards, Hazardous Materials, Waste, and Wildfire. Staff’s proposed COCs AQ-SC1 to AQ-SC6 in Section 5.1, Air Quality, to reduce potential impacts associated with dust and dirt to less than significant, and COC VIS-1, as described in Section 5.15, Visual Resources, would reduce impacts associated with glare to less than significant. No operational impacts were identified in association with noise and vibration, odor, or smoke and noxious gases, or other pollutants. As described in Section 5.16, Water Resources, on-site stormwater detention and treatment systems would be designed to limit stormwater-related erosion onto adjacent properties, consistent with County and State Regional Water Quality Control Board, requirements and a Pest Management Plan would be implemented to minimize the likelihood of pests (including weeds and rodents) that could impact the project site and adjacent properties.

TABLE 6-8 SUMMARY OF FRESNO COUNTY GENERAL PLAN EJ POLICIES AND PROJECT CONFORMANCE

Applicable Policy	Conformance and Basis for Determination
	<p>b. As described in Section 3, Project Description, a maximum of 12 full-time employees is anticipated, with intermittent employees for repairs, maintenance, etc. The proposed project includes an off-street parking area adjacent to the O&M facility.</p> <p>c. As described in Section 3, Project Description, buffers and easements would be established to separate the facility from adjacent uses. On-site vegetation would be maintained.</p> <p>d. Section 3, Project Description, describes the size of the proposed facility that it would operate daily for 24 hours/day, and anticipates a 35-year operational horizon is identified. Should facility expansion be proposed, additional environmental review would be required.</p> <p>e. The proposed project complies with the EJ element.</p>
<p>EJ-A.2. Mitigate for Sensitive Land Uses Near Environmental Concerns. The County shall require buffering and screening requirements as part of the development review process for all new potentially pollution producing land uses proposed to be located adjacent to existing sensitive land uses that have historically been associated with heightened levels of pollution. These land uses associated with pollution include industrial land uses, agricultural operations using pesticides applied by spray techniques, wastewater treatment plants, and landfills and waste treatment facilities.</p>	<p>Yes. As described in Section 3, Project Description, the project would include a buffer between project facilities and sensitive land uses, and a 275-foot easement would be established to accommodate the generation-intertie line. The buffers would avoid nearby sensitive receptors from exposure to pesticides used for project-related landscaping and maintenance. As presented in Section 5.1, Air Quality, emissions associated with project-related construction and operations would be less than significant with incorporation of staff's proposed COCs AQ-SC-1 to AQ-SC-6 and AQ-1 to AQ-18. As described in Section 5.7, Hazardous Materials, the implementation of staff's proposed COCs HAZ-1 to HAZ-9, WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-7, and WORKER SAFETY-9, the project would result in a less than significant impact associated with the routine transport, use, or disposal of hazardous materials or hazardous waste during construction and operation and the risk of wildfires. As described in Section 5.16, Water Resources, the project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant with the implementation of staff's proposed COC WATER 1 during construction, and the implementation of staff's proposed COCs WATER-2 and WATER-4.</p>
<p>EJ-A.12. Industrial Development. New industrial development, which has the potential to create compatibility conflicts with surrounding sensitive uses, shall incorporate measures such as landscaped setbacks along road frontage, block walls, signage disclosing on-site emergency contact information, enclosed loading docks, and placement</p>	<p>Yes. As described in Section 3, Project Description, the proposed project would include a solar facility with battery energy storage station, O&M facility, step-up station, generation-intertie line, switchyard, and include a 50-foot buffers between project structures and sensitive receptors and 275-foot-wide easements for the generation-intertie line to prevent compatibility conflicts with surrounding sensitive uses. An average of 12 permanent staff would be associated site operations, with on-call security staff will remain on call.</p>

TABLE 6-8 SUMMARY OF FRESNO COUNTY GENERAL PLAN EJ POLICIES AND PROJECT CONFORMANCE

Applicable Policy	Conformance and Basis for Determination
of loading docks and idling areas away from sensitive receptors in order to minimize potential impacts.	

Source: Fresno 2024

6.2 Environmental Impacts

The following technical areas discuss project-related nuisance effects on EJ populations and disadvantaged communities: Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials, and Wildfire; Noise and Vibration; Public Health; Solid Waste Management; Transportation; Visual Resources; and Water Resources.

Part of staff’s assessment of how, or if, the project would impact an EJ population includes a review of CES data for the project area. There are four technical areas that could have project impacts that could combine with the indicators in CES: Air Quality; Public Health; Hazards, Hazardous Materials, and Wildfire; and Water Resources. When these technical areas have identified a potential impact in an area that includes an EJ population, CES is used to better understand the characteristics of the areas where the impact would occur and ensure that disadvantaged communities in the vicinity of the project have not been missed when screened by race/ethnicity and low income.

Air Quality

The project site is in the unincorporated area of western Fresno County in the SJVAB. As described in **Section 5.1, Air Quality**, the area of the SJVAB in which the project is located, is classified as nonattainment for the one-hour state ozone standard as well as for the federal and state eight-hour ozone standards. The SJVAB is also designated as nonattainment for the federal and state annual arithmetic mean and federal 24-hour PM2.5 standards. Additionally, the SJVAB is classified as nonattainment for the state 24-hour and annual arithmetic mean PM10 standards. The SJVAB is unclassified or classified as attainment for all other pollutant standards (RCI 2023dd).

Staff identified the potential construction air quality impacts associated with ozone, the ozone precursor oxides of nitrogen (NOx), and PM that could affect the EJ population or disadvantaged community. The results indicate that the project’s criteria pollutant emissions would not occur at rates that could be cumulatively significant after mitigation (**Section 5.1, Air Quality**). The project would contribute to temporary construction impacts, but it would not contribute considerably to the cumulative concentrations; therefore, no disproportionate impacts to an EJ population would occur.

Ozone Concentrations

The exposure indicator in CES for ozone concentrations represents the potential adverse health effects, including respiratory irritation and exacerbation of lung disease,

resulting from ground level ozone. This indicator is defined by the mean of summer months (May-October) of the daily maximum 8-hour ozone concentration. As described in **Section 5.1, Air Quality**, project construction would emit NO_x, which is a precursor of ozone, above SJVAPCD thresholds; all construction activities would comply with applicable federal, state, and local regulations for air quality attainment planning, implement control measures, and implement Conditions of Certification (COCs) to reduce NO_x emissions from project construction to less than significant. Project operation would not produce precursors of ozone above regulatory thresholds. Staff concluded that air quality impacts associated with NO_x would be less than significant, and that the project would not contribute significantly to regional ozone concentrations, relative to baseline conditions. No disproportionate impacts to an EJ population would occur.

Particulate Matter (PM_{2.5} and PM₁₀) Concentrations

Particulate matter (PM) is a complex mixture of aerosolized solid and liquid particles including such substances as organic chemicals, dust, allergens, and metals. These particles can come from many sources, including cars and trucks, industrial processes, wood burning, or other activities involving combustion. The composition of PM depends on the local and regional sources, time of year, location, and weather. PM_{2.5} and PM₁₀ concentrations during construction and operation would not exceed federal or state thresholds. Air Quality COCs would further reduce PM_{2.5} and PM₁₀ emissions. No disproportionate impacts to an EJ population would occur.

Cultural and Tribal Cultural Resources

As described in **Section 5.4, Cultural and Tribal Cultural Resources**, the project site is in the traditional territory of the Penutian-speaking Yokuts, who are further divided based upon linguistic distinctions into the Northern Valley Yokuts, Southern Valley Yokuts, and Foothill Yokuts. The project site is in the approximate ethnographic boundary of the Northern and Southern Valley Yokuts (specifically the Tachi Yokuts).

Potential impacts to cultural and tribal cultural resources were determined to be less than significant with mitigation incorporated. No built environmental Historical Resources, Archaeological Historical Resources, Unique Archaeological Resources pursuant to Public Resources Code Section 15064.5, or human remains are known to exist that would be affected by facility construction. However, if buried archaeological resources were damaged during construction of any of these facilities, it would be considered a significant impact. The incorporation of COCs throughout project-related construction areas would reduce impacts to less than significant.

Therefore, no disproportionate impacts to resources associated with a specific tribe that is an EJ population would occur.

Hazards, Hazardous Materials, and Wildfire

The CES scores for the disadvantaged community census tracts in a 6-mile radius of the project (see **Figure 6-1**) are presented in **Table 6-6** for each of the following environmental stressors that relate to waste management: cleanup sites, hazardous waste generators and facilities, and solid waste facilities.

Hazards and Hazardous Materials

EJ communities may experience disproportionate impacts associated with hazards, hazardous materials, and wildfire impacts if the storage and use of hazardous materials within or near EJ communities occurs to a greater extent than within the community at large or if the project would contribute to or exacerbate the effects of cleanup sites, hazardous waste generators and facilities, and solid waste facilities. A disproportionate impact upon the EJ population could also result from the planned storage and use of hazardous materials on the site.

As described in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, hazardous material brought onto the project site during construction and operation would be stored per the applicable laws, ordinances, regulations, and standards (LORS). Therefore, the likelihood of a spill or release of sufficient quantity to impact the surrounding community would be very unlikely and considered less than significant with mitigation incorporated. Since the overall CES score reflects the collective impacts of multiple pollutants and factors, staff examined the individual contributions to indicators as they relate to hazardous materials presented in its analysis. Neither construction nor operation of the project is expected to generate significant hazardous waste other than those generated during equipment maintenance, such as used lubricating oils and old batteries. Hazardous materials of concern in this analysis are those from construction and operational activities. The handling and disposal of each type of hazardous material depends on the hazardous properties of its constituent materials. Existing LORS ensure the desired handling and disposal of hazardous material and hazardous waste materials to prevent potential public or environmental health impacts. No disproportionate impacts to an EJ population would occur.

Operation of the Battery Energy Storage System (BESS) would include the use of lithium-ion batteries, which could increase the risk of a fire that could emit toxic gases. **Section 4.4, Worker Safety and Fire Protection**, includes COCs and procedures to protect workers from exposure to hazardous material. Staff concluded that the implementation of COCs and the Worker Protection and Safety programs would reduce the risk of an accidental release of hazardous materials and waste and exposure to hazardous materials and waste to less than significant. Staff determined that the potential effects of hazardous materials accidents would be less than significant with

mitigation incorporated from **Section 4.4, Worker Safety and Fire Protection** and **Section 5.7, Hazardous, Hazardous Materials/Waste and Wildfire**.

Cleanup Sites. The CES indicator is calculated by considering the number of cleanup sites including Superfund sites on the National Priorities List (NPL), the weight of each site, and the distance to the census tract. Sites undergoing cleanup actions by government authorities or property owners, have suffered environmental degradation due to the presence of hazardous substances. Of primary concern is the potential for exposure to these substances.

As described in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, the project site is not included on the databases maintained by the Department of Toxic Substances Control's (DTSC) Envirostor or the State Water Resources Control Board's (SWRCB) Geotracker as the location of any hazardous material sites. Neither database identified hazardous material sites on the Cortese list within 1,000 feet of these project components (CalEPA 2024a). Although CES criteria identified the presence of numerous cleanup sites in four Census tracts within the project area, the project would not be developed on a site identified on a list compiled pursuant to Government Code section 65962.5 and would not present a significant hazard to public health or the environment. Therefore, no impacts related to Government Code section 65962.5 would occur. No impact would occur from encountering known contaminated soil within 1,000 feet of the project. To further reduce the risk of exposure to unknown environmental contamination, a Soils Management Plan would be prepared to identify procedures to address the handling, disposal and assessment of such materials.

Existing LORS, and the implementation of COCs for hazardous materials and worker safety would ensure the desired handling and disposal of hazardous material and waste materials, to prevent potential public or environmental impacts. No disproportionate impacts to an EJ population would occur.

Wildfire

Most of the project site is not within a State Responsibility Area (SRA) or Fire Hazard Safety Zone (FHSZ), and the proposed locations for the solar facility, step-up substation, and BESS are more than eight miles east of the nearest SRA or FHSZ (CAL FIRE 2023). The westernmost components of the project, including the project utility switchyard parcel is within an SRA, on a parcel that is in a Moderate and High FHSZ. None of the project site is in a Very High FHSZ.

The project owner proposes to prepare and implement a Project Fire Protection and Prevention Program to reduce construct-related risks of wildfire, such as those associated with the use of vehicles and equipment that could ignite dry vegetation. In addition, the project would implement a Construction and operations and Maintenance (O&M) Fire Protection and Prevention Program, a construction worker Health and Safety Plan, and Construction Fire Prevention Program as required by COCs. Staff concluded that the potential risk associated with wildfires would be less than significant with the

implementation of owner-proposed plans and staff-proposed COCs. No disproportionate impacts to an EJ population would occur.

Noise and Vibration

EJ populations may experience disproportionate noise impacts if the siting of unmitigated industrial facilities occurs within or near EJ communities to a greater extent than within the community at large.

The Fresno County General Plan does not establish noise level thresholds for construction activities. The County's Noise Ordinance exempts construction activities occurring between 6:00 a.m. and 9:00 p.m. on weekdays and between 7:00 a.m. and 5:00 p.m. on weekends, from its noise level standards. The project has proposed that construction activities would occur on-site between the hours of 6:00 A.M. and 7:00 P.M. on weekdays and between 7:00 a.m. and 5:00 p.m. on weekends (RCI 2023u, Section 5.3.3.2).

Construction activities would include the use of equipment that would generate noise that exceeds ambient levels, such as cranes, concrete mixer trucks, pile drivers, and pneumatic tools. In addition, project construction would require the use of helicopters. Construction-related noise from the solar facility and BESS would expose some residents to noise above thresholds. Staff has identified COCs to reduce potential effects associated with construction-related noise and vibration impacts to less than significant. Potential noise associated with project operation would be less than significant. The potential vibration impact associated with construction would be less than significant, and there would be no impact associated with vibration during project operation. No disproportionate impacts to an EJ population would occur.

Public Health

Section 5.10, Public Health, identified that the potential risks to public health during construction would be associated with exposure to particulate matter emissions from diesel-fueled engines (DPM) and fugitive dust that may pose a risk of Valley Fever to individuals near the site. DPM is expected to be the predominant toxic air contaminant (TAC) emitted during construction and is the main contaminant of concern for this project.

Diesel Particulate Matter (DPM). The exposure indicator in CES for diesel PM emissions represents the adverse health effects, such as irritation to the eyes, throat, and nose, cardiovascular and pulmonary disease, and lung cancer from concentrated sources of PM emissions. This indicator is defined by the spatial distribution of diesel PM emissions from on-road and non-road sources.

Staff conducted a public health assessment by evaluating the information and data provided by the applicant (see **Section 5.10, Public Health**). Staff relied upon the expertise and guidelines of the CalEPA Office of Environmental Health Hazard

Assessment (OEHHA) to identify contaminants that cause cancer or other noncancer health effects and to identify the toxicity, cancer potency factors, and non-cancer Reference Exposure Levels (RELS). The health effects of exposure to toxic emissions are based on impacts to the maximum exposed individual.

Staff evaluated health risks primarily in relation to DPM, because it identified DPM as the TAC expected to be emitted in the largest quantity during project construction. Since OEHHA has not developed an acute reference exposure level (REL) for DPM, acute non-cancer health effects could not be evaluated.

The results of the health risk assessment indicated that cancer risk and chronic non-cancer risk hazard index were well below San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds for construction and operation (see **Section 5.10, Public Health**). The implementation of COCs for air quality presented in **Section 5.1, Air Quality** to reduce DPM emissions would further reduce health risks. The health risks would be well below the significance thresholds and thus less than significant. No disproportionate impacts to an EJ population would occur.

Pesticide Use. The exposure indicator in CES for pesticide use represents certain high-hazard, high-volatility substances that may lead to unintended environmental damage. This indicator is defined by the total mass of active pesticide ingredients (filtered for hazard and volatility) used in production-agriculture areas (OEHHA, 2021). The proposed project would include vegetation management adjacent to facility components. Pesticides would not be used in areas that are available to the public, and the risk to the public would be less than significant. No disproportionate impacts to an EJ population would occur.

Toxic Releases from Facilities. The exposure indicator in CES for chemical releases is defined by the toxicity-weighted concentrations of modeled chemical releases to air from facility emissions and off-site incineration.

As described in **Section 5.1, Air Quality**, air quality effects were identified in association with facility operation in association with vehicle trips for worker commutes, material deliveries, site security and facility upkeep, and from O&M building operations, and fuel combustion during the use of emergency generators. According to the results of the health risk assessment conducted for the project in **Section 5.10, Public Health**, impacts associated with toxic releases from construction and operation activities (diesel-fueled equipment) would be less than significant. The project would not have a significant cumulative contribution to toxic releases and there would not be any disproportionate impacts on the EJ population.

The BESS would include the use of lithium-ion batteries that could emit toxic gases in the event of a fire during operations or after disposal. Staff concluded that the project would result in a less than significant risk to the public through the disposal of hazardous materials or waste, including batteries. All battery disposals would be

conducted in accordance with applicable LORS, COCs and the development of a Worker Safety Program to reduce the risks associated with on-site fire and the disposal of hazardous materials. The potential risk associated with project-related toxic emissions would be less than significant. No disproportionate impacts to an EJ population would occur.

Valley Fever. Coccidioidomycosis or "Valley Fever" is caused by inhaling the spores of the fungus *Coccidioides immitis*, which are released from the soil during soil disturbance (e.g., during construction activities) or wind erosion. The eastern portion of the project site is located in western Fresno County where the risk is higher compared to other parts of the county (Fresno 2023). Construction activities associated with the project, including ground-disturbing operations, could increase the potential for exposure to airborne spores among nearby residents and on-site workers if such spores are present. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled.

Staff concluded that the potential risk to public health and those near the site during construction to be less than significant with mitigation incorporated, and less than significant during project operation. Staff proposes COCs for worker safety, public health and air quality, which require the applicant to prepare a fugitive dust plan, worker education, and other actions. The potential risk associated with project-related emissions of *Coccidioides* spores would be less than significant. No disproportionate impacts to the EJ population would occur.

Traffic Impacts. The exposure indicator in CES for traffic impacts represents the vehicles in a specified area, resulting in human exposures to chemicals that are released into the air by vehicle exhaust. Communities in the project area are not exposed to high traffic impacts as compared to the rest of the state. This indicator is defined by the sum of traffic volumes adjusted by road segment length. The project would generate vehicle trips to the site. These trips include workers, material, and equipment deliveries.

Analyzed in **Section 5.14, Transportation**, roads in the vicinity of the project area operate at a sufficient level of service (LOS) to support temporary construction-related traffic. Operation of the project would not cause a substantial increase in traffic volumes within the transportation system affecting the efficiency of the transportation system, including transit, roadway, bicycle, and pedestrian facilities. Any effect of project-generated traffic during construction would be temporary in nature and is not expected to result in any long-term impacts to the transportation system. Therefore, the project's traffic impact would not have a significant cumulative contribution to the traffic density for the local general population. No disproportionate impacts to an EJ population would occur.

Asthma. The sensitive population indicator in CES for asthma represents the number of emergency department visits for asthma per 10,000 people. As shown in **Table 6-7**, a

portion of the project area includes census tracts for which the number of ED visits for asthma per 10,000 people in 2022 was higher than 88 percent of tracts statewide. As described in **Section 5.1, Air Quality**, project construction would emit NOx, which is a precursor of ozone, above SJVAPCD thresholds; all construction activities would comply with applicable federal, state, and local regulations for air quality attainment planning, implement control measures, and implement COCs to reduce NOx emissions from project construction to less than significant. All other criteria pollutants and ozone precursors would be below regulatory thresholds. Project operation would not produce precursors of ozone or other criteria pollutants above regulatory thresholds. Staff concluded that air quality impacts associated with NOx would be less than significant, and the project would not contribute significantly to regional ozone concentrations, relative to baseline conditions. Furthermore, staff concluded that the project would not result in a cumulatively considerable net increase of any criteria pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Furthermore, according to the results of the health risk assessment conducted for the project cited in **Section 5.10, Public Health**, impacts associated with emissions from construction and operation activities would be less than significant. Health effects of air contaminants emitted by the project would be less than significant for the project. No disproportionate impacts to an EJ population would occur.

Low-Birth-Weight Infants. This indicator measures the percentage of babies born weighing less than 2500 grams (about 5.5 pounds) out of the total number of Census tract data for the project area indicates that the percentage of low birthweights is higher than the state average; the tract indicates that one tract data indicates that once census tract in the project area shows a low-birth-weight percentile for this census tract is 66.6467, meaning the percent low birth weight is higher than 67 percent of tracts statewide. As described in **Section 5.1, Air Quality**, project construction would emit NOx, which is a precursor of ozone, above SJVAPCD thresholds; all construction activities would comply with applicable federal, state, and local regulations for air quality attainment planning, implement control measures, and implement COCs to reduce NOx emissions from project construction to less than significant. All other criteria pollutants and ozone precursors would be below regulatory thresholds. Project operation would not produce precursors of ozone or other criteria pollutants above regulatory thresholds. Staff concluded that air quality impacts associated with NOx would be less than significant, and the project would not contribute significantly to regional ozone concentrations, relative to baseline conditions. Furthermore, staff concluded that the project would not result in a cumulatively considerable net increase of any criteria pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Furthermore, according to the results of the health risk assessment conducted for the project cited in **Section 5.10, Public Health**, impacts associated with emissions from

construction and operation activities would be less than significant. Health effects of air contaminants emitted by the project would be less than significant for the project. No disproportionate impacts to an EJ population would occur.

Cardiovascular Disease. This indicator represents the rate of heart attacks. It measures the number of emergency department (ED) visits for acute myocardial infarction (AMI) (or heart attack) per 10,000 people in 2022. As shown in **Table 6-7**, CES data indicates that a portion of the project area population includes experiences a comparatively greater number of ED visits for cardiovascular disease. One Census tract included a percentile of 89 percent, indicating that the number of ED visits for AMI per 10,000 people over in 2022 is higher than 89 percent of tracts statewide.

As described in **Section 5.1, Air Quality**, project construction would emit NO_x, which is a precursor of ozone, above SJVAPCD thresholds; all construction activities would comply with applicable federal, state, and local regulations for air quality attainment planning, implement control measures, and implement COCs to reduce NO_x emissions from project construction to less than significant. All other criteria pollutants and ozone precursors would be below regulatory thresholds. Project operation would not produce precursors of ozone or other criteria pollutants above regulatory thresholds. Staff concluded that air quality impacts associated with NO_x would be less than significant, and the project would not contribute significantly to regional ozone concentrations, relative to baseline conditions. Furthermore, staff concluded that the project would not result in a cumulatively considerable net increase of any criteria pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Furthermore, according to the results of the health risk assessment conducted for the project cited in **Section 5.10, Public Health**, impacts associated with emissions from construction and operation activities would be less than significant. Health effects of air contaminants emitted by the project would be less than significant for the project. No disproportionate impacts to an EJ population would occur.

Solid Waste

CES considers data in the State's Solid Waste Information System and the number of solid waste facilities, operations, and disposal sites within 1,000 meters of a census tract, including closed landfills and disposal sites that have not met minimum state standards for closure. Data from the State's Hazardous Waste Tracking System is also considered (OEHHA, 2021). As shown in **Table 6-6**, CES scores for the Solid Waste category indicate that a portion of the study area ranked in the 98th percentile based on the number of and types of solid waste facilities in the vicinity, which is among the highest scores for tracts statewide. The handling and disposal of each type of project-related construction and operation is dependent on the hazardous ranking of its constituent materials. Existing LORS ensure the desired handling and disposal of waste materials without potential public or environmental health impacts. Staff evaluated the project to identify whether it would generate solid waste in quantities that would

exceed the capacity of existing facilities or impair the attainment waste-reduction goals. Staff also considered whether the amount of solid waste generated during construction or operation would comply with federal, state and local management and reduction statutes and regulations. Staff concluded that the quantity of solid waste generated could be disposed of in the three available landfills that have adequate capacity. In addition, COCs require the preparation of a Construction Waste Management Plan, which would ensure recycling to the greatest extent possible. Construction and operation of the proposed project would comply with applicable LORS. Staff concluded that there would be no increase in solid waste generators and facilities in the area due to project construction or operation because there is adequate capacity to dispose of project-related solid waste, and no existing solid waste sites would be affected by the project; therefore, the project would have a less than significant impact associated with the generation or disposal of solid waste with mitigation incorporated. No disproportionate impacts to an EJ population would occur.

Transportation

Significant reductions in transportation options may significantly impact EJ populations. An impact to bus transit, pedestrian facilities, or bicycle facilities could cause a disproportionate impact to low-income communities. As identified in **Section 5.14, Transportation**, no sidewalks or bicycle facilities exist on roadways accessing the project site or within the immediate study area. No existing or planned bikeways or regional trails are present. One round-trip bus route runs from Five Points to Fresno daily.

As concluded in **Section 5.14, Transportation**, the addition of project-generated traffic during construction and operation would not cause a substantial increase in traffic volumes to affect the efficiency of the transportation system, including transit services. Potential transportation effects would be less than significant. No disproportionate impacts to an EJ population would occur.

Visual Resources

A project-related visual impact may occur if a project is in proximity to an EJ population and the following circumstances occur:

- The project, if in a non-urbanized area, substantially degrades the existing visual character or quality of the public view of the site and its surroundings.
- The project creates a new source of substantial light and glare that would adversely affect day or nighttime views in the area.

The project is located in a rural area. Staff considered if the project could have a substantial adverse effect on a scenic vista or substantially degrade the existing visual character or quality of public views of the site and its surroundings. Staff evaluated the potential effects the project could have on the existing visual character and the potential adverse effects on the quality of public views. Staff concluded that the

potential adverse project-related effects and cumulative effects would be less than significant with recommended COCs to address surface coatings, colors and finishes and outdoor light and glare emitted during construction and operations.

Implementation of the project would alter the visual character and quality in the project vicinity by introducing dominant industrial characteristics into a landscape with a largely agricultural character in an area that contains an EJ population. However, the potential adverse effects on visual character were determined to be less than significant with mitigation. No disproportionate impacts to an EJ population would occur.

Water Resources

The project would be required to comply with the Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act by controlling the discharge of pollutants during its construction and operation phases. The project would implement modern storm water and containment controls that would improve upon the site's potential to release contaminants to the environment. The project's water resources impacts would be less than significant with mitigation incorporated.

A disproportionate water resources impact to an EJ population could occur if the project would contribute to drinking water degradation, exacerbate groundwater contamination, or discharge additional pollutants to impaired surface water bodies. Since the overall CES score reflects the collective impacts of multiple pollutants and factors, staff examined the individual contributions to indicators as they relate to water resources. The pollutants of concern in this analysis are those from construction and operation activities. The CES scores for the disadvantaged community census tracts in a six-mile radius of the project (see **Figure 6-1**) are presented in **Table 6-6** for each of the following environmental stressors that relate to water resources: Drinking Water Contaminants, Groundwater Threat, and Impaired Water Bodies.

Drinking Water Contaminants. CES aggregates drinking water quality data from the California Department of Public Health, the U.S. EPA, and the SWRCB. The score provided by the Drinking Water Contaminant metric calculation is intended to rank water supplies relative to their history or likelihood to provide water that exceeds drinking water standards. Low-income rural communities, particularly those served by small community water systems, can be disproportionately exposed to contaminants in their drinking water.

As concluded in **Section 5.16, Water Resources**, prior to any ground-disturbing construction activity, the applicant would prepare a construction Stormwater Pollution Prevention Plan (SWPPP) to comply with the Construction General Permit. With the implementation of the SWPPP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction. A project operations Drainage, Erosion, and Sedimentation Control Plan (DESCP) would be prepared to monitor stormwater events

and associated best management practices (BMP). No disproportionate impacts to an EJ population would occur.

Groundwater Threats. Common groundwater pollutants found at contaminant release sites in California include gasoline and diesel fuels; chlorinated solvents and other volatile organic compounds; heavy metals such as lead, chromium, and arsenic; polycyclic aromatic hydrocarbons; persistent organic pollutants like polychlorinated biphenyls and pesticides; and perchlorate.

Groundwater would be a component of the water supplies for the project and would be produced from project parcels in amounts up to existing groundwater allocations attached to property ownership, for 2 AFY per 320 acres of land. The project site is underlain by the Westside Subbasin of the San Joaquin Valley Groundwater Basin (SJVGB).

In addition, the project would include the use of aquifer storage and recovery (ASR) to bank surface water obtained as surplus flows from the WWD for use as needed during project operation. The ASR project would occur in the Westside Subbasin that underlies the project site and would be developed and implemented in coordination with WWD. Water would be recovered from the ASR bank in amounts not exceeding the amount of surplus surface flows that are contributed to the bank under the project. As such, the project would not directly consume native groundwater as a result of conducting ASR in the Westside Subbasin.

As concluded in **Section 5.16, Water Resources**, project construction water demand of 1,100 AF and the operational water demand of 35 AFY would be groundwater provided through a purchase option agreement with WWD. The purchase agreement with WWD, as well as tracking construction/operations water demand would be addressed to provide project water supply. Groundwater production well(s) would be installed within the O&M building compound in accordance with State water well standards and Fresno County ordinance to comply with applicable water resource COCs. With incorporation of the required COCs, as well as compliance with the Sustainable Groundwater Management Act (SGMA), the project would not be expected to overdraft local groundwater resources, and impacts would be less than significant with mitigation. No disproportionate impacts to an EJ population would occur.

Impaired Water Bodies. As concluded in **Section 5.16, Water Resources**, one of the two Hydrologic Unit Code (HUC) 12 watersheds in the project area, Fresno Slough, is listed as impaired with pesticides on the Impaired Waters for California according to Section 303(d) List of the Clean Water Act. Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a Total Maximum Daily Load (TMDL) to maintain water quality and reduce the potential for future water quality degradation. Prior to any ground-disturbing construction activity, the applicant would prepare a construction SWPPP to comply with the Construction General Permit.

With the implementation of the SWPPP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction. A project operations DESCP would be prepared to monitor stormwater events and associated BMPs. No disproportionate impacts to an EJ population would occur.

6.3 References

- CalEPA 2021 – California Environmental Protection Agency (CalEPA). CalEnviroScreen (CES) 4.0 Microsoft Excel Spreadsheet data. Last updated May 2023. Available online at: <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>
- CalEPA 2022a – California Environmental Protection Agency (CalEPA). Final Designation of Disadvantage Communities Pursuant to Senate Bill 535. May 2022. Available online at: https://calepa.ca.gov/wp-content/uploads/sites/6/2022/05/Updated-Disadvantaged-Communities-Designation-DAC-May-2022-Eng.a.hp_-1.pdf
- CalEPA 2022b – California Environmental Protection Agency (CalEPA). SB 535 Excel Spreadsheet and data dictionary. Last updated May 2022. Available online at: <https://oehha.ca.gov/calenviroscreen/sb535>
- Federal Register 2023 – Executive Order 14096 of April 21, 2023. Revitalizing Our Nation's Commitment to Environmental Justice for All. Available online at: <https://www.govinfo.gov/content/pkg/FR-2023-04-26/pdf/2023-08955.pdf>
- Federal Register 1994 – Executive Order 12898 of February 11, 1994. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Available online at: www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf
- Fresno 2024 – Fresno County General Plan Policy Document. General Plan Review and Revision. Final. February 2024. Accessed in February 2024 and July 2024. Available online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
- LCI 2020 – Office of Land Use and Climate Innovation (LCI). General Plan Guidelines. Chapter 4: Required Elements. 4.8 Environmental Justice Element. Available online at: https://lci.ca.gov/docs/20200706-GPG_Chapter_4_EJ.pdf
- OEHHA 2021 – California Environmental Protection Agency (CalEPA), Office of Environmental Health Hazard and Assessment (OEHHA). CalEnviroScreen (CES) 4.0. October 2021. Available online at: <https://oehha.ca.gov/media/downloads/calenviroscreen/report/calenviroscreen40reportf2021.pdf>
- RCI 2024ff – Rincon Consultants, Inc. (TN 259510). Updated Darden Clean Energy Project Description_Redline. Dated October 9, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

- RCI 2023dd – Rincon Consultants, Inc. (TN 252983). Section 5-7 Air Quality. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023gg – Rincon Consultants, Inc. (TN 253020). Appendix S Water Supply Assessment. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023qq – Rincon Consultants, Inc. (TN 254588). Appendix M Socioeconomics Study Feb 2024. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- US Census Bureau 2021 – American Community Survey (ACS), 5-year Estimates. Available online at: <https://www.census.gov/programs-surveys/acs>
- US EPA 2015 – United States Environmental Protection Agency (US EPA). Guidance on Considering Environmental Justice During the Development of Regulatory Actions. May 2015. Available online at: <https://www.epa.gov/sites/default/files/2015-06/documents/considering-ej-in-rulemaking-guide-final.pdf>
- US EPA 2024 – United States Environmental Protection Agency (US EPA). How's My Waterway? Last updated on December 11, 2024. Available online at: <https://mywaterway.epa.gov/state/CA/water-quality-overview>
- WWD 2023 – Westlands Water District (WWD). 2023, Westlands Water District, Water Management Plan (5 Year Update). Available online at: <https://wwd.ca.gov/water-management/additional-water-management/water-management-plan/>
- WWD 2025 – Westlands Water District (WWD). Westlands Water District, Water Supply.. Last updated on January 9, 2025. Available online at: <https://wwd.ca.gov/water-management/water-supply/>

Section 7

Public Benefits

7 Public Benefits

7.1 Regulatory Setting

Assessment of the project's benefits must be evaluated under four related frameworks with distinct purposes. This includes an evaluation of: (1) public benefits, (2) benefits related to an override finding (when necessary), (3) net positive economic benefit to the local government, and (4) community benefits (as set forth in Public Resources Code sections 25523(h), 25525, 25545.9, and 25545.10, respectively). This section discusses the first framework, public benefits. For a discussion on net positive benefit to the local government and community benefits, see **Section 10, Mandatory Opt-In Findings**.

Public Resources Code section 24454.8 incorporates Public Resources Code section 25523(h), which states: "The commission shall prepare a written decision after the public hearing on an application, which includes ...[a] discussion of any public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits." Such identified benefits may be discussed in detail in various sections of staff's environmental assessment such as socioeconomic and utilities and service systems. A qualitative discussion addressing public benefits is appropriate as there is no specific threshold of benefit necessary under this section for project approval. Consistent with this directive, staff describes in summary form the key benefits of the project relating to economic, environmental and reliability benefits of the project.

This is in comparison to the local government net benefit requirements of Public Resources Code section 25545.9 which sets a threshold that must be met for the project to be approved, "The commission shall not certify a site and related facility under this chapter unless the commission finds that the construction or operation of the facility will have an overall net positive economic benefit to the local government...". See **Section 10, Mandatory Opt-In Findings** for the analysis on the project's net economic benefits to Fresno County. The statutory language requiring an overall net positive economic benefit to the local government, indicates the need for a more quantitative analysis to support the requisite finding of net positive economic benefit to the County. Importantly, project costs to the County must be determined, to the extent feasible, so that a realistic net economic impact can be arrived at. Only if this net impact is positive can the project be potentially approved.

7.2 Economic, Environmental and Electric Reliability Public Benefits

Economic

As detailed in **Section 5.11, Socioeconomics** and **Section 10, Mandatory Opt-In Findings**, the project's public benefits include economic benefits typical for a large-scale industrial project with long construction periods. These benefits include various types of construction jobs and associated payrolls, sales taxes, equipment rentals, and local spending related to the project and from its workers. Once construction is completed, the

project would employ a minimal number of staff. The project will also contribute various types of taxes to the local community. See **Section 10, Mandatory Opt-In Findings**, for findings on net economic benefits from the construction and operations of the project to Fresno County.

In addition to employment, local spending, and tax revenue from the project, the applicant has agreed to provide the \$320,000 to the Centro La Familia Advocacy Services, a California 501(c)(3) non-profit organization in Fresno, California, which offers a broad range of programs designed to assist crime victims, support families and children, promote health and wellness, encourage civic engagement by way of providing outreach, advocacy and education services to those in need.

The applicant also has multiple other agreements to provide funds to various local non-profit organizations.

Environmental

As discussed in **Section 3, Project Description** the project's renewable generation would contribute to meeting the State of California's renewable energy policy objectives as described by the interim targets in Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020, Laird, Chapter 361, Statute of 2022) that require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. Most of the project would be on contaminated lands that are poorly suited for agricultural use and where the highest and best use is long-term solar energy generation.

The project's battery storage system would also contribute to the state's 100 Percent Clean Energy Act of 2018 (Senate Bill 100, De León, Chapter 312, Statute of 2018) policy objectives with a 2045 goal of California's electricity system to be carbon free by capturing and storing renewable energy when generation is plentiful and dispatching energy for use when it is scarce.

Reliability

Reliability is an evaluation of the robustness of the state's electrical system, the grid, and the project's impact on that system. As discussed in **Section 3, Project Description**, BESS facilities can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid. The project would include a battery storage system capable of storing up to 1,150 MW of electricity for four hours (up to 4,600 megawatt-hours). Overall, the state would benefit from project's reliability contributing to the diversity of renewable generation. In addition, the state's electrical grid reliability would increase with the project providing electricity during increased load demand.

Conclusions

Consistent with Public Resources Section 25523(h), this section provides a summary description of the economic, environmental, and reliability benefits of the project. More

detailed information including project impacts are discussed in the technical sections as well as in **Section 10, Mandatory Opt-In Findings**.

Section 8

Alternatives

8 Alternatives

8.1 Introduction

The California Environmental Quality Act (CEQA) requires an evaluation of the comparative effects of a range of reasonable alternatives to the project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project (CEQA Guidelines § 15126.6(f)). This section discusses alternatives to the proposed Darden Clean Energy Project (project) including the No Project Alternative and the Reduced Footprint Alternative.

Project objectives are considered throughout this section; these objectives are detailed in **Section 3, Project Description**.

8.2 Summary of Conclusions

Staff evaluated two alternatives that were found to be potentially feasible and that could avoid or reduce some of the proposed project's potentially significant impacts:

- No Project Alternative
- Reduced Footprint Alternative

The No Project Alternative and the Reduced Footprint Alternative would avoid or substantially lessen the impacts expected to occur under the project. **Table 8-1** and **Table 8-2** provide a summary comparison of the proposed project environmental impacts and those of the No Project Alternative and the Reduced Footprint Alternative, respectively. Only the Reduced Footprint Alternative was determined by staff to avoid or substantially lessen potentially significant effects of the proposed project while achieving the project's basic objectives, but at a lesser degree than the project due to the reduced renewable energy provided to the grid.

8.3 CEQA Requirements

The CEQA Guidelines provide the regulatory requirements for an alternatives analysis in an environmental impact report (EIR) (California Code of Regulations (CCR), tit. 14, § 15000 et seq.). Section 15126.6 of the CEQA Guidelines provides that the alternatives analysis must:

- describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project;
- evaluate the comparative merits of the alternatives;

- focus on alternatives that would avoid or substantially lessen any significant effects of the project, even if these alternatives would impede to some degree attainment of the project objectives, or would be more costly; and
- describe the rationale for selecting alternatives to be discussed and identify alternatives that were initially considered but then rejected from further evaluation.

CEQA requires that an EIR “consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation” (CCR, tit. 14, § 15126.6, subd. (a)). Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are failure to meet most of the basic project objectives, infeasibility, or inability to avoid significant environmental impacts (CCR, tit. 14, § 15126.6, subd. (c)). The range of potentially feasible alternatives selected for analysis is governed by a “rule of reason,” requiring evaluation of only those alternatives “necessary to permit a reasoned choice” (CCR, tit. 14, § 15126.6, subd. (f)).

An EIR is not required to consider alternatives that are infeasible (CCR, tit. 14, § 15126.6, subd. (a)). In addressing feasibility of alternatives, factors that may be taken into account are site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (CCR, tit. 14, § 15126.6, subd. (f)(1)). An EIR “need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (CCR, tit. 14, § 15126.6, subd. (f)(3)).

The lead agency is also required to evaluate the “no project” alternative along with its impact. Analyzing a no project alternative allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (CCR, tit. 14, § 15126.6, subd. (e)(1)). “The ‘no project’ analysis shall discuss the existing conditions at the time the notice of preparation is published...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (CCR, tit. 14, § 15126.6, subd. (e)(2)).

8.4 Factors in Selection of Alternatives

Objectives

The process of selecting alternatives for analysis begins with establishing project objectives. Section 15124(b) of the CEQA Guidelines addresses the requirement for an EIR to contain a statement of objectives, as follows:

“A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision

makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project and may discuss the project benefits.”

As stated in **Section 3, Project Description**, the objectives for the project include:

- Design, construct, and operate the facility in a manner that respects the local community, its values, and its economy.
- Operate the facility in a manner that protects the safety of on-site staff and off-site members of the public.
- Generate sales tax revenues for Fresno County by establishing a point of sale in the county for the procurement of most major project services and equipment.
- Create temporary and permanent living-wage, union jobs for local and regional residents.
- Generate affordable wholesale electric power to serve the ratepayers of the Fresno County region and the State of California.
- Contribute to addressing the climate crisis by generating renewable energy to displace climate-warming fossil fuel-based generation, and in so doing, helping to create a global climate that is hospitable to future generations and wild places.
- Contribute to meeting the State of California’s renewable energy policy objectives as described by the interim targets in Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill (SB) 1020, Laird, Chapter 361, Statute of 2022) to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.
- Assist the nation in meeting its Nationally Determined Contribution commitments under Article 4 of the Paris Climate Agreement to achieve a 50 to 52 percent reduction in United States (U.S.) greenhouse gas pollution from 2005 levels by 2030, and to achieve 100 percent carbon pollution-free production in the electricity sector by 2035.
- Given the urgency of the climate crisis, site and rapidly construct a major renewable energy generation facility on contaminated lands that are poorly suited for agricultural use and where the highest and best use is long-term solar energy generation.
- Minimize environmental impacts and land disturbance associated with solar energy development by siting the facility on relatively flat, contiguous lands with low quality habitat, high solar insolation in close proximity to existing roads and established utility corridors.
- Create a new point of interconnection in the Central Valley along California’s backbone transmission infrastructure to facilitate this project and future generators helping meet the state’s renewable energy goals.

- Contribute to meeting 100 Percent Clean Energy Act of 2018 (SB 100, De León, Chapter 312, Statute of 2018) policy objectives with a 2045 goal of California's electricity system to be carbon free by capturing and storing renewable energy when it is plentiful and dispatching for use when it is scarce.
- Construct a high-voltage electrical interconnection facility (the switchyard) to enhance the capacity of the transmission system and allow for the delivery of wholesale renewable electricity to the statewide grid, on behalf of the regulated utility.

The alternatives were also selected in consideration of one or more of the following factors:

- The extent to which the alternative would accomplish most of the basic objectives of the project;
- The feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, consistency with regulatory limitations, and whether the project owner can reasonably acquire, control, or otherwise have access to the site or off-site locations that could potentially be a project alternative;
- The appropriateness of the alternative in contributing to a "reasonable range" of alternatives necessary to permit a reasoned choice; and
- The requirements of CEQA Guidelines to consider a "no project" alternative and to identify an "environmentally superior" alternative in addition to the no-project alternative (CEQA Guidelines, § 15126.6).

8.5 Environmental Impacts of the Project

As described above, CEQA requires a discussion of alternatives that would avoid or lessen any of the project's significant effects. Throughout this staff assessment, staff evaluates the impacts of implementing the project and recommends conditions of certification (COC) and mitigation measures (**MM**) to reduce potentially significant impacts to less-than-significant levels.

A summary of each of the environmental resource area COCs, impact assessment and LORS conformance is provided in **Section 1, Executive Summary**. One resource area with several potentially significant impacts (prior to mitigation) is biological resources. Jurisdictional project components may impact federal or state listed wildlife and other special-status wildlife species, including San Joaquin kit fox, Swainson's hawk, burrowing owl, and migratory birds using the Important Bird Areas and riparian and aquatic features along the Pacific Flyway. With implementation of staff's recommended COCs, the jurisdictional project components would have a less than significant impact related to biological resources and would conform with applicable LORS. A review of the impacts identified some areas of the project site that are more sensitive than others and that information was used to develop the Reduced Footprint Alternative evaluated in this section. The Reduced Footprint Alternative is designed to substantially reduce

the project footprint to eliminate installation of Photovoltaic (PV) panels on areas with known biological sensitive habitat.

In consideration of the above factors, the No Project Alternative and the Reduced Footprint Alternative are analyzed in this section.

8.6 Alternatives Considered and Not Evaluated Further

CEQA Guidelines section 15126.6(c) describes the selection of a reasonable range of alternatives and the requirement to include those that could feasibly accomplish most of the basic project objectives while avoiding or substantially lessening one or more of the significant effects. The analysis should identify any alternatives that were considered by the lead agency, but were rejected as infeasible. CEQA requires a brief explanation of the reasons underlying the lead agency's determination to eliminate alternatives from detailed analysis.

Several alternatives were considered in the process of identifying a reasonable range of alternatives to the project. Two of those alternatives, which were ultimately not evaluated further are the Alternative Project Site and Other Battery Technologies. These are described in more detail below.

8.6.1 Alternative Project Site

CEQA Guidelines § 15126.6(f)(2) requires examination of an alternative location for a project if such locations would result in the avoidance of or lessening of significant impacts. An alternate location would likely be of comparable size and would pose similar potential environments impacts, which may not be able to be mitigated to a less-than-significant level. The proposed project site satisfies the project objectives and meets feasibility criteria including a flat project site and proximity to existing electrical and transportation infrastructure. The proposed project site is separated from existing residences and has limited habitat value for special status species, and does not contain sensitive cultural resources nor important agricultural lands. The proposed project site is identified as Priority Least Conflict Land for solar energy development in the San Joaquin Valley least conflict solar analysis (Pearce et al. 2016).

The project site location was selected to largely avoid areas where project implementation would impact Williamson Act-contracted land. The majority of parcels spanned by the gen-tie line, as well as the proposed point of interconnection/utility switchyard site are under Williamson Act contract. However, cancellation of these contracts would not be required because ongoing operation of the generation-intertie (gen-tie) line would permit existing agricultural activities to continue and the project components would be a compatible use, per Government Code Section 51238(a)(1). Approximately 9,115 acres of the 9,500-acre project site, which would be utilized for the project's solar facility and battery energy storage systems (BESS), are not Williamson Act-contracted land. The project utility switchyard location is adjacent to the existing PG&E Los Banos-Midway #2 500 kV line and other existing transmission lines, which the project, as well as future projects, would tie into.

As a result of these attributes, the proposed project site is uniquely well-suited for solar and BESS, and it would be difficult to find an equivalent available alternative project location that would satisfy the siting constraints analysis. This Alternative Project Site was rejected from further analysis because an alternate location would not substantially avoid or lessen the proposed project impacts without reducing project feasibility.

8.6.2 Other Battery Technologies

The BESS is proposed to use lithium-ion batteries. Other battery technologies were considered as an alternative because lithium-ion batteries pose potential fire and explosion hazards related to thermal runaway events, as detailed in **Section 4.4, Worker Safety and Fire Protection**. Other battery technologies were considered as a potential alternative to lithium-ion batteries proposed by the project but were rejected from further consideration due to several drawbacks discussed below. The other battery technologies considered were redox flow, sodium-sulfur, and lead-acid batteries.

Redox Flow Batteries. Redox flow batteries operate on the principle of redox reactions, where oxidation and reduction processes occur in a fluid electrolyte. The main components of a flow battery include two tanks of electrolyte solutions, one for the catholyte (positive side) and one for the anolyte (negative side), and a cell stack where the electrochemical reactions take place. Redox flow batteries store energy in liquid electrolytes, which are pumped from external reservoirs into the cell stack during charging and discharging cycles. Vanadium is currently employed in most flow batteries; however, several flow battery technologies that do not contain vanadium are emerging such as zinc-bromine, iron, organic based, and sodium-based flow batteries (EPRI, 2024).

Since the active electrolytic material is separated from the reactive electrodes in the battery, redox flow batteries have a much higher level of safety relative to other electrochemical energy storage technologies. Additional advantages include long life cycle, low fire risk due to low flammability of battery and electrolyte material, and easy maintenance. However, compared to lithium-ion batteries, redox flow batteries have lower energy and power densities and typically involve more space-intensive system infrastructure, which limits them for large-scale stationary applications. Redox flow batteries also tend to have lower round-trip efficiencies compared to lithium-ion batteries and have higher costs due in part to a lack of large-scale manufacturing capacity and the need for pumps, sensors and other power and flow management systems (NREL, 2021). Redox flow battery technology was rejected from further analysis because it has lower energy and power densities requiring more space and additional equipment compared to lithium-ion batteries and is not a proven technology at the scale of the proposed project.

Sodium-Sulfur Batteries. Sodium-sulfur batteries are a type of high-temperature battery that relies on a reversible redox reaction between molten sodium and sulfur to charge and discharge electricity. Sodium-sulfur batteries have high energy densities, which can make them advantageous for areas with space constraints. Sodium-sulfur

batteries are in the initial commercialization phase, marked by high energy density, low levels of self-discharge (which correspond to higher efficiencies), and relatively long cycle life. These storage systems rely on common, abundant, and cheap materials, which may help drive down costs relative to storage systems reliant on scarce minerals (NREL, 2021).

In addition, sodium-sulfur batteries have high reliability and can be easily installed, relocated, and maintained; however, these batteries operate at high temperatures, which presents certain safety issues that could limit applications. Several notable safety failures of deployed sodium-sulfur systems, which caused fires, combined with declining lithium-ion costs, have led to declining deployments (NREL, 2021). Sodium-sulfur battery technology was rejected from further analysis because it is not a proven technology at the scale of the proposed project and has its own fire and safety issues and would not substantially reduce the impacts associated with potential fire hazards.

Lead-Acid Batteries Lead-acid battery storage is a mature, widely commercialized technology driven by its applications in transportation. Lead-acid battery storage serves both stationary and transportation needs and is widely used in micro-grid applications. The basic components of a typical rechargeable lead-acid battery system include a lead dioxide (PbO_2) positive electrode, a spongy lead (Pb) negative electrode, an electrolyte solution made of higher concentration of aqueous sulfuric acid solution ($\text{H}_2\text{SO}_4(\text{aq})$) and water. There are several subtypes of lead-acid batteries, each with unique advantages and challenges, including: vented lead-acid, valve-regulated lead-acid, absorbent glass mat, and hybrid systems (NREL, 2021).

Lead-acid batteries have low upfront costs relative to newer battery technologies, including lithium-ion; however, several characteristics, such as their short cycle life and inability to remain uncharged for long periods or to be deeply discharged without permanent damage, have limited their applications in utility-scale power system applications. Lead-acid batteries are likely better suited in off-grid applications such as in isolated microgrids, particularly where upfront costs can be a barrier. Lead-acid battery technology was rejected from further analysis because it is not suitable for large utility-scale power systems (NREL, 2021).

Summary of Other Battery Technologies. In summary, although there is a known risk of thermal runaway with lithium-ion batteries proposed by the project, there are no other battery technologies that are commercially available that can be proposed to effectively and economically replace the lithium-ion batteries proposed for the project. Currently, proposed utility-scale BESS projects are all proposing lithium-ion batteries with enhanced engineering and fire prevention controls to minimize the risk, scale, and consequences of thermal runaway events.

8.7 Alternatives Selected for Analysis and Comparison to the Proposed Project

The following alternatives are fully analyzed and compared to the project:

- No Project Alternative
- Reduced Footprint Alternative

Table 8-1, below, summarizes the environmental effects for each alternative compared to the proposed project. **Table 8-2** reviews the ability of the proposed project and the two alternatives to meet the project objectives.

8.7.1 No Project Alternative

The project site is predominantly lands retired from irrigated agriculture that have been irregularly farmed over the last 10 years and seasonally or annually disked when not growing crops. Some active farming occurred in limited areas on the project site during 2023. The project's gen-tie line spans privately-owned land on the western portion of the project site with land-cover types including active agriculture. It is reasonably foreseeable that the No Project Alternative would result in a continuation of existing or similar conditions at the project site. The areas of the project site currently supporting active agriculture would likely continue to support active agriculture and the other areas would likely continue to be retired from agricultural use, a major renewable energy facility would not be constructed, and the project objectives would not be attained. As can be seen in **Table 8-2**, this alternative does not meet any of the project objectives.

8.7.2 Reduced Footprint Alternative

Figure 8-1 is the site plan evaluated for the Reduced Footprint Alternative. Under the Reduced Footprint Alternative, approximately 1,400 acres would be removed from the project's 9,500 acre footprint, and 480,000 fewer solar panels would be installed. Specifically, a 60-acre area northeast of the BESS, planned for the construction of 21,000 solar panels, would be eliminated from the planned footprint of the proposed project. Another 60-acre parcel in the southeast of the solar facility, also designated for 21,000 panels, would be removed from the planned footprint of the proposed project. Additionally, a two-mile by one-mile rectangular area (1,280 acres) southwest of the BESS would be preserved as foraging land and removed from development. Approximately 440,000 solar panels would be eliminated by removal of the large rectangular two-square mile area. This alternative would preserve nesting trees and the surrounding currently undeveloped open space where Swainson's hawks, burrowing owls, and associated nesting has been observed. Under this alternative, the amount of solar panels across the solar site would decrease from 3,100,000 to approximately 2,620,000 and the generating capacity would decrease from 1,150 MW to approximately 970 MW, a 16 percent reduction.

During surveys of the project site in 2023, including the jurisdictional components and PG&E utility switchyard, five active Swainson's hawk nests were detected on site (RCI

2023w; RCI 2023tt). There are approximately 30 suitable nest trees present within the proposed solar facility area. There is suitable nesting habitat in the solar facility, BESS, step-up substation, and gen-tie line corridor project areas. There is suitable foraging habitat present within active and retired and managed agricultural lands found within entire project site, including the jurisdictional components. This species is not expected to forage near the PG&E utility switchyard. Per the applicant, this agricultural land is characterized as “medium quality” foraging habitat (IP 2024p). This species was documented foraging in the solar facility footprint during surveys (IP 2024p). The Reduced Footprint Alternative would preserve area suitable as Swainson’s Hawk foraging area.

Burrowing owls have been observed within the project area. Reconnaissance surveys conducted in December 2022 and on March 30, 2023 (RCI 2023rr), as well as site inspections conducted from February to June 2023 (RCI 2023rr), confirmed their presence. Burrowing owls were observed along larger irrigation ditches, at the ends of irrigation piping, and along the edges of dirt roads. Four potentially active burrows were identified at the at the northern perimeter of the project site, within the area northeast of the BESS removed from development as part of the Reduced Footprint Alternative. An additional 13 potentially active burrows were identified along the east perimeter of the area in the southeast of the solar facility removed from development as part of this alternative.

The Reduced Footprint Alternative would result in many of the same environmental, economic, and policy benefits that the project would generate, as this alternative would satisfy all the project objectives (see **Table 8-2**).

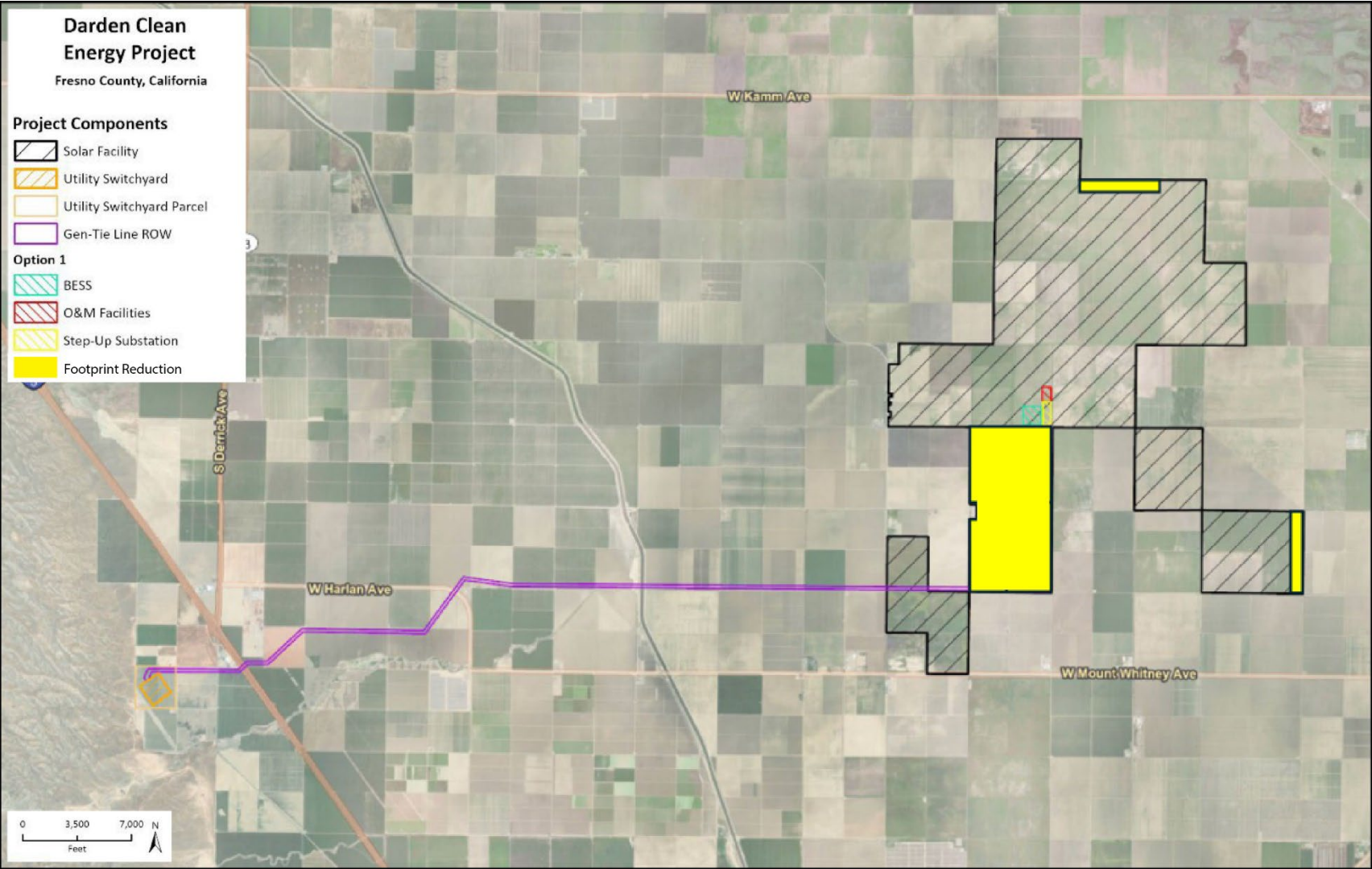


Figure 8-1
Reduced Footprint Alternative

Sources: IP 2024n

8.7.3 Environmental Impacts of the No Project Alternative

Air Quality. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture, and minimal construction or operational emissions would be generated. The No Project Alternative would result in reduced construction and operational emissions in comparison to the No Project Alternative. Therefore, the No Project Alternative would have less air quality impacts compared to the project.

Biological Resources. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. Since no new ground disturbing activities would occur, the No Project Alternative would avoid potential impacts to biological resources associated with the project. Similar to the proposed project, there would be no impact to federally protected wetlands. Overall, the No Project Alternative would have less impact on biological resources compared to the proposed project.

Climate Change and Greenhouse Gas Emissions. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture, and none of the construction or operational greenhouse gas (GHG) emissions from the proposed project would be generated. The proposed project would have a net GHG reduction primarily due to the emissions avoided by producing electricity from renewable energy (-94,740 Metric Tons of carbon dioxide equivalent (CO₂e)/year). The No Project Alternative would not generate electricity from renewable energy and would not have a net GHG reduction from the indirect effect of generating electricity from renewable energy. Therefore, the No Project Alternative would have greater GHG impacts compared to the proposed project.

Cultural and Tribal Cultural Resources. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. Since no new ground disturbing activities would occur, the No Project Alternative would avoid potential impacts to unknown cultural and tribal cultural resources (TCR) that could be associated with the project. Therefore, the No Project Alternative would have less cultural resources and TCRs impacts compared to the project.

Efficiency and Energy Resources. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. While the project could potentially reduce nonrenewable energy use regionally by providing a new source of renewable energy that may displace the use of nonrenewable energy, it is too speculative to analyze and quantify the potential nonrenewable energy use decrease in the region from the project. Furthermore, the energy used to construct the project would no longer be consumed. Therefore, the No Project Alternative would have less impacts on efficiency and energy resources compared to the project.

Geology, Paleontology, and Minerals. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. Since no new ground disturbing activities would occur, the No Project Alternative would avoid potential impacts of geology and soils associated with the proposed project. Therefore, the No Project Alternative would have less geology and soils impacts compared to the proposed project.

Hazards, Hazardous Materials/Waste, and Wildfire. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. Since no construction or operational activities would occur, the No Project Alternative would have less hazards, hazardous materials, and wildfire impacts compared to the project.

Land Use, Agriculture, and Forestry. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. The No Project Alternative would result in no impacts associated with construction and operation of the project and no loss of agricultural land. Therefore, the No Project Alternative would have reduced land use plan, policy, and regulation conflicts and agriculture impacts compared to the project. Similar to the proposed project, the No Project Alternative would have no impact on forestry resources.

Noise and Vibration. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture, and no construction or operational noise would be generated. Therefore, the No Project Alternative would have less noise and vibration impacts compared to the project.

Public Health. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture, and no construction or operational emissions would be generated. Therefore, the No Project Alternative would have less public health impacts compared to the project.

Socioeconomics. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture, and no impacts to population growth or public services would occur. Therefore, the No Project Alternative would have less socioeconomic impacts compared to the project.

Solid Waste Management. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture and no impacts to solid waste generation would occur. Therefore, the No Project Alternative would have less solid waste management impacts compared to the project.

Transportation. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture, and no construction or operational vehicles trips would be generated. Therefore, the No Project Alternative would have less transportation impacts compared to the project.

Visual Resources. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. Therefore, the No Project Alternative would have less visual resources impacts compared to the project.

Water Resources. Under the No Project Alternative, the project site would likely remain in its current state of use as retired farmland and active agriculture. Since no new ground disturbing activities would occur, the No Project Alternative would avoid potential impacts to hydrology and water quality associated with the project. Therefore, the No Project Alternative would have less hydrology and water quality impacts compared to the project.

8.7.4 Environmental Impacts of the Reduced Footprint Alternative

Air Quality. Under the Reduced Footprint Alternative, less construction emissions would be generated because approximately 440,000 solar panels would not be installed. Also, less operational emissions would be generated because there would be less deliveries and less maintenance when compared to the proposed project. Therefore, the Reduced Footprint Alternative would have less air quality impacts compared to the project.

Biological Resources. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Under the Reduced Footprint Alternative, less ground disturbing activities would occur and potential impacts to biological resources on the project site would be reduced. Similar to the proposed project, there would be no impact to federally protected wetlands. Overall, the Reduced Footprint Alternative would have less impact on biological resources than the proposed project.

Climate Change and Greenhouse Gas Emissions. Under the Reduced Footprint Alternative, less construction GHG emissions would be generated because approximately 440,000 solar panels would not be constructed. Less operational GHG emissions would be generated because maintenance would occur for a smaller number of solar panels across a reduced area. The proposed project would have a net GHG reduction primarily due to the emissions avoided by producing electricity from renewable energy (-94,740 Metric Tons of CO₂e/year). The Reduced Footprint Alternative would have reduced amount of avoided GHG emissions, due to less solar panels and less renewable electricity generation. Therefore, the Reduced Footprint Alternative would have a slightly greater indirect GHG impacts compared to the proposed project.

Cultural and Tribal Cultural Resources. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Under the Reduced Footprint Alternative less ground disturbing activities would occur and potential impacts to unknown cultural and TCRs that could be associated with the

project would be reduced. Therefore, the Reduced Footprint Alternative would have less cultural resources and TCRs impacts compared to the project.

Efficiency and Energy Resources. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Approximately 440,000 solar panels would not be installed. The smaller construction footprint of this alternative would utilize less energy resources during construction. However, the energy demands associated with project operations, including supporting infrastructure and BESS operations, would remain similar. While the project could potentially reduce regional nonrenewable energy use by providing a new source of renewable energy that may displace the use of nonrenewable energy, it is too speculative to analyze and quantify the potential nonrenewable energy use decrease in the region from the project. Therefore, the Reduced Footprint Alternative would have less energy impacts compared to the project.

Geology, Paleontology, and Minerals. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Since less new ground disturbing activities would occur, the Reduced Footprint Alternative would reduce potential impacts of geology and soils associated with the project. Therefore, the Reduced Footprint Alternative would have less geology and soils impacts compared to the proposed project.

Hazards, Hazardous Materials/Waste, and Wildfire. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Approximately 440,000 solar panels would not be constructed and consequently less hazardous materials would be needed for operation and maintenance activities. Therefore, the Reduced Footprint Alternative would result in reduced presence of hazardous materials and would have less hazardous materials and hazardous waste impacts compared to the project. The Reduced Footprint Alternative would reduce the size of the solar facility, east of Interstate 5 (I-5). However, the remaining infrastructure west of I-5 is partially within State Responsibility Areas (SRAs) and partially within areas designated as a Moderate Fire Hazard Severity Zone. Because wildfire risk in this area is primarily influenced by existing environmental conditions rather than project footprint size, removing components east of I-5 would not reduce wildfire hazards. Therefore, the Reduced Footprint Alternative would have a similar impact of hazards from wildfire as the project, and a reduced impact to hazardous materials and hazardous waste compared to the project.

Land Use, Agriculture, and Forestry. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Therefore, the Reduced Footprint Alternative would have slightly reduced land use plan, policy, and regulation conflicts and agriculture impacts compared to the project. Similar to the proposed project, the Reduced Footprint Alternative would have no impact on forestry resources.

Noise and Vibration. Under the Reduced Footprint Alternative, less construction noise would be generated because 440,000 solar panels would not be constructed. Less operational noise would be generated because the scope of operation and maintenance activities would be diminished. Therefore, the Reduced Footprint Alternative would have less noise and vibration impacts compared to the project.

Public Health. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Approximately 440,000 solar panels would not be constructed and therefore less construction and operational emissions would be generated. Therefore, the Reduced Footprint Alternative would have less public health impacts compared to the project.

Socioeconomics. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. There would be slightly less impacts to population growth and public services. Therefore, the Reduced Footprint Alternative would have less socioeconomic impacts compared to the project.

Solid Waste Management. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. There would be less impacts to solid waste management from the reduction of the project footprint. Therefore, the Reduced Footprint Alternative would have less solid waste management impacts compared to the project. Similar to the proposed project, there would be no impact on compliance with solid waste regulations.

Transportation. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Approximately 440,000 solar panels would not be constructed and therefore less construction and operational vehicles trips would be generated. Therefore, the Reduced Footprint Alternative would have less transportation impacts compared to the project.

Visual Resources. Under the Reduced Footprint Alternative, the project would have an approximately 1,400-acre reduction to the project footprint. Therefore, the Reduced Footprint Alternative would have less visual resources impacts compared to the project.

Water Resources. Under the Reduced Footprint Alternative, the project would have an approximately 1,400 acre reduction to the project footprint. Since less new ground disturbing activities would occur, the Reduced Footprint Alternative would reduce potential impacts to hydrology and water quality associated with the project. Therefore, the Reduced Footprint Alternative would have less hydrology and water quality impacts compared to the project.

8.8 Environmentally Superior Alternative

CEQA requires that an EIR identify the environmentally superior alternative and discuss the facts supporting that selection. The environmentally superior alternative is the alternative found to have an overall environmental advantage compared to the other

alternatives based on the impact analysis. In evaluating the anticipated environmental impacts of the proposed project and alternatives, staff has determined that the No Project Alternative would have the least environmental effects. However, the No Project Alternative would not meet any project objectives. Furthermore, “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (CCR, tit. 14, § 15126.6, subd. (e)(2)). Therefore, as required by CEQA, staff have identified the Reduced Footprint Alternative as the Environmentally Superior Alternative. The Reduced Footprint Alternative would lessen impacts of the proposed project in many issue areas (see **Table 8-1**) while substantially meeting the project objectives (see **Table 8-2**). However, the Reduced Footprint Alternative would provide less renewable energy to the grid than the proposed project.

Table 8-1 summarizes the comparison of environmental effects for each alternative to the proposed project.

Table 8-2 shows the ability of each alternative to achieve the project objectives. As shown by the table, the No Project Alternative fails to meet any of the projects objectives. The Reduced Footprint Alternative substantially meets all the project objectives, but at a lesser degree than the project due to the reduced renewable energy provided to the grid.

TABLE 8-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project	Reduced Footprint
Air Quality			
Conflict with or obstruct implementation of the applicable air quality plan	LTSM	Less	Less
Result in a cumulatively considerable net increase of any criteria pollutant	LTSM	Less	Less
Expose sensitive receptors to substantial pollutant concentrations	LTSM	Less	Less
Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	LTS	Less	Less
Biological Resources			
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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	LTSM	Less	Less
Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	LTSM	Less	Less
Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	No Impact	Similar	Similar
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 wildlife nursery sites	LTSM	Less	Less
Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	LTSM	Less	Less
Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan	LTSM	Less	Less
Climate Change and GHG			
Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	LTSM	Greater	Greater
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions	LTSM	Less	Less
Cultural and Tribal Cultural Resources			
Cause a substantial adverse change in the significance of a historical resource	LTSM	Less	Less
Cause a substantial adverse change in the significance of a unique archaeological resource	LTSM	Less	Less
Disturb human remains	LTSM	Less	Less

TABLE 8-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project	Reduced Footprint
Cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in California Register of Historical Resources, or in a local register	LTSM	Less	Less
Cause a substantial adverse change in the significance of a tribal cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant	LTSM	Less	Less
Energy Resources			
Impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	LTS	Less	Less
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	LTS	Less	Less
Geology, Paleontology, and Minerals			
Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault	LTS	Less	Less
ii. Strong seismic ground shaking?	LTSM	Less	Less
iii. Seismic-related ground failure, including liquefaction	LTSM	Less	Less
iv. Landslides	LTS	Less	Less
Result in substantial soil erosion or the loss of topsoil?	LTSM	Less	Less
Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse	LTSM	Less	Less
Be on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property	LTSM	Less	Less
Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water	LTS	Less	Less
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	LTSM	Less	Less
Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State	LTS	Less	Less
Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan	LTS	Less	Less
Hazards, Hazardous Materials, and Wildfire			
Create a significant hazard to the public or the environment through the routine transport, use, or	LTSM	Less	Less

TABLE 8-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project	Reduced Footprint
disposal of hazardous materials			
Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	LTSM	Less	Less
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	No Impact	Similar	Similar
Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code, section 65962.5 and, as a result, would it create a significant hazard to the public or the environment	LTSM	Less	Less
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area	No Impact	Similar	Similar
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	No Impact	Similar	Similar
Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires	LTSM	Less	Similar
If located in or near state responsibility areas or lands classified as very high fire hazard severity zone:			
i. Substantially impair an adopted emergency response plan or emergency evacuation plan	No Impact	Similar	Similar
ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire	LTSM	Less	Similar
iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment	LTSM	Less	Similar
iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	No Impact	Similar	Similar
Land Use, Agriculture, and Forestry			
Physically divide an established community	No Impact	Similar	Similar
Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	LTSM	Less	Less
Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the	LTS	Less	Less

TABLE 8-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project	Reduced Footprint
California Resources Agency, to non-agricultural use			
Conflict with existing zoning for agricultural use, or a Williamson Act contract	LTS	Less	Less
Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code, section 51104(g))	No Impact	Similar	Similar
Result in the loss of forest land or conversion of forest land to non-forest use	No Impact	Similar	Similar
Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	LTS	Less	Less
Noise and Vibration			
Generation of a substantial increase in ambient noise levels	LTSM	Less	Less
Generation of excessive groundborne vibration levels	LTS	Less	Less
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	No Impact	Similar	Similar
Public Health			
Expose sensitive receptors to substantial pollutant concentrations or result in other public health impact	LTS	Less	Less
Socioeconomics			
Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	LTS	Less	Less
Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere	LTS	Less	Less
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	LTSM	Less	Less
i. Fire protection	LTSM	Less	Less
ii. Police Protection	LTSM	Less	Less
iii. Schools	LTSM	Less	Less

TABLE 8-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project	Reduced Footprint
iv. Parks	LTSM	Less	Less
v. Other public facilities	LTSM	Less	Less
Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	LTS	Less	Less
Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment	No Impact	Similar	Similar
Solid Waste Management			
Generate solid waste in excess of the capacity of local infrastructure	LTSM	Less	Less
Comply with federal, state, and local management and reduction statutes and regulations related to solid waste	No Impact	Similar	Similar
Transportation			
Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	LTS	Less	Less
Conflict or be inconsistent with CEQA Guidelines, section 15064.3, subdivision (b)	LTS	Less	Less
Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	No Impact	Similar	Similar
Result in inadequate emergency access	LTS	Less	Less
Visual Resources			
Have a substantial adverse effect on a scenic vista	LTS	Less	Less
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway	LTS	Less	Less
In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality	LTSM	Less	Less
Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	LTSM	Less	Less
Water Resources			
Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	LTSM	Less	Less
Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	LTSM	Less	Less

TABLE 8-1 SUMMARY COMPARISON OF IMPACTS OF THE PROPOSED PROJECT TO THE ALTERNATIVES

Environmental Topics and Impacts	Proposed Project	Alternatives	
		No Project	Reduced Footprint
Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:			
i. result in substantial erosion or siltation, on- or offsite;	LTSM	Less	Less
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	LTSM	Less	Less
iii. create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; and	LTSM	Less	Less
iv. or impede or redirect flood flows	LTSM	Less	Less
In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation	No Impact	Similar	Similar
Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	LTSM	Less	Less
Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years	LTSM	Less	Less
Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments	LTSM	Less	Less
LORS Consistency	Consistent	Consistent	Consistent

Notes: Impact conclusions for the proposed project and the alternatives are indicated as follows:

No Impact = no potential to affect the resource

LTS = less-than-significant impact, no mitigation required

LTSM = less-than-significant impact with mitigation incorporated

The comparisons of impacts to the proposed project are indicated as follows:

- Less
- Similar
- Greater

TABLE 8-2 ALTERNATIVES ABILITY TO MEET PROJECT OBJECTIVES COMPARISON

Objectives	No Project Alternative	Reduced Footprint Alternative
Design, construct, and operate the facility in a manner that respects the local community, its values, and its economy.	N	✓
Operate the facility in a manner that protects the safety of on-site staff and off-site members of the public.	N	✓
Generate sales tax revenues for Fresno County by establishing a point of sale in the county for the procurement of most major project services and equipment.	N	✓
Create temporary and permanent living-wage, union jobs for local and regional residents.	N	✓
Generate affordable wholesale electric power to serve the ratepayers of the Fresno County region and the State of California.	N	✓
Contribute to addressing the climate crisis by generating renewable energy to displace climate-warming fossil fuel-based generation, and in so doing, helping to create a global climate that is hospitable to future generations and wild places.	N	✓
Contribute to meeting the State of California's renewable energy policy objectives as described by the interim targets in Clean Energy, Jobs, and Affordability Act of 2022 (SB 1020, Laird, Chapter 361, Statute of 2022) to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.	N	✓
Assist the nation in meeting its Nationally Determined Contribution commitments under Article 4 of the Paris Climate Agreement to achieve a 50 to 52 percent reduction in United States (U.S.) greenhouse gas pollution from 2005 levels by 2030, and to achieve 100 percent carbon pollution-free production in the electricity sector by 2035.	N	✓
Given the urgency of the climate crisis, site and rapidly construct a major renewable energy generation facility on contaminated lands that are poorly suited for agricultural use and where the highest and best use is long-term solar energy generation.	N	✓
Minimize environmental impacts and land disturbance associated with solar energy development by siting the facility on relatively flat, contiguous lands with low quality habitat, high solar insolation in close proximity to existing roads and established utility corridors.	N/A	✓
Create a new point of interconnection in the Central Valley along California's backbone transmission infrastructure to facilitate this project and future generators helping meet the state's renewable energy goals.	N	✓
Contribute to meeting 100 Percent Clean Energy Act of 2018 (SB 100, De León, Chapter 312, Statute of 2018) policy objectives with a 2045 goal of California's electricity system to be carbon free by capturing and storing renewable energy when it is plentiful and dispatching for use when it is scarce.	N	✓

TABLE 8-2 ALTERNATIVES ABILITY TO MEET PROJECT OBJECTIVES COMPARISON

Objectives	No Project Alternative	Reduced Footprint Alternative
Construct a high-voltage electrical interconnection facility (the switchyard) to enhance the capacity of the transmission system and allow for the delivery of wholesale renewable electricity to the statewide grid, on behalf of the regulated utility.	N	✓

Notes:

✓ = Alternative substantially achieves objective

X = Alternative partially achieves objective

N = Alternative does not achieve objective

NA = Alternative is not applicable to the objective, would not hinder objective

8.9 References

- CDFW 1994 – California Department of Fish and Game. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. Dated November 8, 1994. Available online at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83992&inline>
- EPRI 2024 – Electric Power Systems Research. The Role of Energy Storage Systems for a Secure Energy Supply: A Comprehensive Review of System Needs and Technology Solutions. Dated August 14, 2024. Available online at: <https://www.nrel.gov/docs/fy24osti/91235.pdf>
- IP 2024p – Intersect Power (TN 260669). Updated Incidental Take Permit – Volume 1. Dated December 16, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- National Renewable Energy Laboratory. Greening the Grid. USAID Grid-Scale Energy Storage Technologies Primer. Dated July 2021. Available online at: <https://www.nrel.gov/docs/fy21osti/76097.pdf>
- Pearce, D., Strittholt, J., Watt, T., and E. Elkind. A Path Forward Identifying Least-Conflict Solar PV Development in California's San Joaquin Valley. Dated May 2016. Available online at: <https://www.law.berkeley.edu/wp-content/uploads/2016/05/A-PATH-FORWARD-May-2016.pdf>
- RCI 2023w – Rincon Consultants, Inc. (TN 252974). Section 5-12 Biological Resources. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023rr – Rincon Consultants, Inc. (TN 253038-1 through TN 253038-3). Appendix Q Biological Resources Assessment. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023tt – Rincon Consultants, Inc. (TN 253534). Appendix R Species Observed and with Potential to Occur and 10-mile CNDDb. Dated December 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

Section 9

Compliance Conditions and Compliance Monitoring Plan

9 Compliance Conditions and Compliance Monitoring Plan

9.1 Introduction

The Darden Clean Energy Project (project) Compliance Conditions of Certification (COCs), including a Compliance Monitoring Plan (Compliance Plan), are established as required by Public Resources Code section 25545.11. The Compliance Plan provides a means for assuring that the facility is constructed, operated, and closed in compliance with public health and safety and environmental law; all other applicable laws, ordinances, regulations, and standards (LORS); and the conditions adopted by the California Energy Commission (CEC) Final Decision (Decision) on the project's Opt-in application (OPT), or otherwise required by law.

The Compliance Plan is composed of elements that:

- set forth the duties and responsibilities of the compliance project manager (CPM), the project owner or operator, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- state procedures for settling disputes and making post-certification changes;
- state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all CEC-approved COCs;
- establish contingency planning, facility non-operation protocols, and closure requirements; and
- establish a tracking method for the technical area COCs that contain measures required to mitigate potentially adverse project impacts associated with construction, operation, and closure below a level of significance; each technical COCs also includes one or more verification provisions that describe the means of assuring that the condition has been satisfied.

9.2 Key Project Event Definitions

The following terms and definitions help determine when various COCs are implemented.

Project Certification

Project certification occurs on the day the CEC docket its decision after adopting it at a publicly noticed Business Meeting or hearing. At that time, all CEC COCs become binding on the project owner and the proposed facility. Also at that time, the project enters the compliance phase. It retains the same docket number it had during its siting review, but the letter "C" is added at the end (for example, 19-OPT-8C) to differentiate the compliance phase activities from those of the Opt-in application proceeding.

Site Assessment and Pre-Construction Activities

The below-listed site assessment and pre-construction activities may be initiated or completed prior to the start of construction, subject to the CPM's approval of the specific site assessment or pre-construction activities.

Site assessment and pre-construction activities include the following, but only to the extent the activities are minimally disruptive to soil and vegetation and will not affect listed or special-status species or other sensitive resources:

1. the installation of environmental monitoring equipment;
2. a minimally invasive soil or geological investigation;
3. a topographical survey;
4. any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility;
5. any minimally invasive work to provide safe access to the site for any of the purposes specified in 1 through 4, above; and
6. removal of small surface structures and equipment that is minimally invasive such as sheds, trailers, and similar sized structures.

Site Mobilization and Construction

When a COC requires the project owner to take an action or obtain CPM approval prior to the start of construction, or within a period of time relative to the start of construction, that action must be taken, or approval must be obtained, prior to any site mobilization or construction activities, as defined below.

Site mobilization and construction activities are those necessary to provide site access for construction mobilization and facility installation, including both temporary and permanent equipment and structures, as determined by the CPM.

Site mobilization and construction activities include, but are not limited to:

1. ground disturbance activities like grading, boring, trenching, leveling, mechanical clearing, grubbing, and scraping;
2. site preparation activities, such as access roads, temporary fencing, trailer and utility installation, construction equipment installation and storage, equipment and supply laydown areas, borrow and fill sites, temporary parking facilities, chemical spraying, and controlled burns; and
3. permanent installation activities for all facility and linear structures, including access roads, fencing, utilities, parking facilities, equipment storage, mitigation and landscaping activities, and other installations, as applicable.

Commissioning

Commissioning activities test the functionality of the installed components and systems to ensure the facility operates safely and reliably. Commissioning provides a multistage, integrated, and disciplined approach to testing, calibrating, and proving all of the project's systems, software, and networks. For compliance monitoring purposes, examples of commissioning activities include interface connection and utility pre-testing, "cold" and "hot" electrical testing, system pressurization and optimization tests, and grid synchronization.

Start of Commercial Operation

For compliance monitoring purposes, "commercial operation" or "operation" begins once commissioning activities are complete, the certificate of occupancy has been issued, and the power plant has reached reliable steady-state electrical production. At the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager. Operation activities can include a steady state of electrical production, or, for "deployable battery energy storage systems," a seasonal or on-demand operational regime to meet peak load demands.

Non-Operation and Closure

Non-operation is time-limited and can encompass part or all of a facility. Non-operation can be a planned event, usually for equipment maintenance or repair, or unplanned, usually the result of unanticipated events or emergencies.

Closure is a facility shutdown with no intent to restart operation. It may also be the cumulative result of unsuccessful efforts to re-start over an increasingly lengthy period of non-operation. Facility closures can occur due to a variety of factors, including, but not limited to, irreparable damage and/or functional or economic obsolescence.

9.3 Roles and Responsibilities

Provided below is a generalized description of the compliance roles and responsibilities for CEC staff (staff) and the project owner for the construction and operation of the project.

Compliance Project Manager Responsibilities

The CPM's compliance monitoring and project oversight responsibilities include:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Decision;
2. resolving complaints;
3. processing post-certification project amendments for changes to the project description, COCs and ownership or operational control, and requests for extension of the deadline for the start of construction (see COM-10 for instructions on filing a Petition to Amend (PTA) or to extend a construction start date);

4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

The CPM is the central contact person for the CEC during project preconstruction, construction, operation, emergency response, and closure. The CPM will consult with the appropriate responsible parties when handling compliance issues, disputes, complaints, and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal requires CPM approval required by a condition of certification, the approval will involve appropriate staff and management. All submittals must include searchable electronic versions (.pdf, MS Word, or equivalent files).

Pre-Construction and Pre-Operation Compliance Meeting

The CPM may schedule pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. These meetings are used to assist the CEC and the project owner's technical staff in the status review of all required pre-construction or pre-operation COCs and facilitate staff taking proper action if outstanding conditions remain. In addition, these meetings shall ensure, to the extent possible, that CEC's COCs do not delay the construction and operation of the plant due to last-minute unforeseen issues, or a compliance oversight. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes or exchanging information regarding the project's pre-construction.

Energy Commission Record

The CEC maintains the following documents and information as public record, in either the Compliance file or Dockets Unit files, for the life of the project (or other period as specified):

1. all documents demonstrating compliance with any legal requirements relating to the construction, operation, and closure of the facility;
2. all Monthly and Annual Compliance Reports (MCRs, ACRs) and other required periodic compliance reports (PCRs) filed by the project owner;
3. all project-related formal complaints of alleged noncompliance filed with the CEC; and
4. all petitions for project or COC changes and the resulting action by staff or the CEC.

Chief Building Official Delegation and Agency

Public Resources Code section 25532 requires the CEC to establish a monitoring system to assure that any facility it certifies is constructed and operated in a manner consistent with law and the CEC's Decision. In carrying out these responsibilities through monitoring construction and operation of the project, the CEC has the responsibilities of

the chief building official (CBO) consistent with Health and Safety Code section 18949.27 and Title 24, part 2, section 104 (commonly referred to as the California Building Code, or CBC). Staff may delegate some CBO responsibility to either an independent third-party contractor or a local building official, as per section 103.3 of part 2 of the CBC. However, staff retains CBO authority when selecting a delegate CBO (DCBO), including the interpretation and enforcement of state and local codes, and the use of discretion, as necessary, in implementing the various codes and standards. (See section 104.1 of part 2 of the CBC).

The DCBO will be responsible for the implementation of all appropriate codes, standards, and CEC requirements. The DCBO will conduct on-site (including linear facilities) reviews and inspections at intervals necessary to fulfill these responsibilities. The project owner will pay all DCBO fees necessary to cover the costs of these reviews and inspections.

Project Owner Responsibilities

Should the project be approved, the project owner is responsible for ensuring that all COCs and applicable LORS in the project Decision are satisfied. The project owner will submit all compliance submittals to the CPM for processing unless the conditions specify another recipient. The Compliance conditions regarding post-certification changes specify measures that the project owner must take when modifying the project's design, operation, or performance requirements, or to transfer ownership or operational control. Failure to comply with any of the COCs or applicable LORS may result in a non-compliance report, an administrative fine, certification revocation, or any combination thereof, as appropriate.

9.4 Compliance Enforcement

The CEC's legal authority to enforce the terms and conditions of its Decision are specified in Public Resources Code sections 25545.11 and 25900. The CEC may amend or revoke a project certification and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Decision. The CEC's actions and fine assessments would take into account the specific circumstances of the incident(s).

Periodic Compliance Reporting

Many of the COCs require submittals in the MCRs and ACRs. All compliance submittals assist the CPM in tracking project activities and monitoring compliance with the terms and conditions of the project Decision. During construction, the project owner or an authorized agent will submit compliance reports on a monthly basis. During operation, compliance reports are submitted annually; though reports regarding compliance with various technical area COCs may be required more often (e.g. Biological Resources), and if the project is operating with a temporary permit to occupy. Further detail regarding the MCR/ACR content and the requirements for an accompanying compliance matrix are described below.

Investigation Requests and Complaint Procedures

Any person may file a Request for Investigation alleging noncompliance with the COCs, CEC regulations, or orders. Such a request shall be filed with and reviewed by the Executive Director. The provisions setting forth the Request for Investigation process can be found in Title 20, California Code of Regulations, sections 1230 through 1232.5. The Request for Investigation may result in the Executive Director bringing a complaint against the alleged violator under section 1233 and seeking administrative penalties. The California Office of Administrative Law provides on-line access to the California Code of Regulations at <http://www.oal.ca.gov/>.

9.5 Post-Certification Changes to the Energy Commission Decision

The project owner must petition the CEC pursuant to Title 20, California Code of Regulations, section 1882, to amend the Final Decision in order to modify the design, operation, or performance requirements of the project and/or the linear facilities, or to transfer ownership or operational control of the facility. It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1882, and the CPM will determine whether staff approval will be sufficient, or whether CEC approval will be necessary.

A project owner is required to submit a \$5,000 dollar fee for every petition to amend the license for a previously certified facility, pursuant to Public Resources Code section 25806(e). If the actual amendment processing costs exceed \$5,000.00, the total PTA reimbursement fees owed by a project owner will not exceed the maximum filing fee, which is \$1,068,853 adjusted annually. Current amounts for PTA fees are available at <https://www.energy.ca.gov/programs-and-topics/topics/power-plants/licensing-and-compliance-fees-facilities>. Implementation of a project modification without first securing CEC approval may result in an enforcement action including civil penalties in accordance with Public Resources Code, section 25545.11.

Below is a summary of the criteria for determining the type of approval process required, reflecting the provisions of Title 20, California Code of Regulations, section 1882, at the time this compliance plan was drafted. If the CEC modifies this regulation, the language in effect at the time of the requested change shall apply. Upon request, the CPM can provide sample formats of these submittals.

Changes to the Design, Operation or Performance of the Project

The project owner shall submit a Petition to Amend the CEC Decision, pursuant to Title 20, California Code of Regulations, section 1882 (b), when proposing changes to the design, operation, or performance requirements of the project and/or the linear facilities. All project changes that do not require the preparation of a subsequent or supplemental environmental impact report as set forth in California Code of Regulations, title 14, sections 15162 and 15163 are subject to staff approval. Project changes that do require the preparation of a subsequent or supplemental environmental impact report shall be submitted to the CEC for consideration.

A decision by staff to approve a project change is subject to a 14-day public comment period where one may object to staff being able to approve a project change. Any such objection must make a showing supported by facts that the change does not meet the criteria for a staff approved change. Speculation, argument, conjecture, and unsupported conclusions or opinions are not sufficient to support an objection to staff approval.

If there is a valid objection to a staff action, the petition must be considered by the CEC at a publicly noticed meeting.

Change of Ownership and/or Operational Control

Changes of ownership or operational control shall be approved by staff. Upon approval, the new owner/operator is obligated to follow all project conditions of certification and applicable laws. Failure to do so subjects the new owner/operator to enforcement actions and civil penalties under Public Resources Code section 25534.

9.6 Emergency Response Contingency Planning and Incident Reporting

To protect public health and safety and environmental quality, the COCs include contingency planning and incident reporting requirements to ensure compliance with necessary health and safety practices. A well-drafted contingency plan avoids or limits potential hazards and impacts resulting from serious incidents involving personal injury, hazardous spills, flood, fire, explosions, or other catastrophic events and ensures a comprehensive timely response. All such incidents must be reported immediately to the CPM and documented. These requirements are designed to protect the public, build from "lessons learned," limit the hazards and impacts, anticipate and prevent recurrence, and provide for the safe and secure shutdown and restart of the facility.

9.7 Facility Closure and Certification Termination

The CEC cannot reasonably foresee all potential circumstances in existence when a facility permanently closes. Therefore, the closure conditions provided herein strive for the flexibility to address circumstances that may exist at some future time. Most importantly, facility closure must be consistent with all applicable CEC COCs and the LORS in effect at that time.

Prior to submittal of the facility's Final Closure Plan to the CEC, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM will hold one or more workshops and/or the CEC may hold public hearings as part of its approval procedure.

With the exception of measures to eliminate any immediate threats to public health and safety or to the environment, facility closure activities cannot be initiated until the CEC approves the Final Closure Plan and Cost Estimate, and the project owner complies with

any requirements the CEC may incorporate as conditions of approval of the Final Closure Plan.

Upon approving the project owner's final closure plan, the CEC may direct that the facility's certification be terminated at the time staff finds the closure process contained in the plan has been completed.

9.8 Compliance Conditions of Certification

COM-1 Unrestricted Access. The project owner shall take all steps necessary to ensure that the CPM, responsible CEC staff, and delegate agencies or consultants, have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on site for the purpose of conducting audits, surveys, inspections, or general or closure-related site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time, whether such visits are by the CPM in person or through representatives from CEC staff, delegated agencies, or consultants.

COM-2 Compliance Record. The project owner shall maintain electronic copies of all project files and submittals accessible on site, or at an alternative site approved by the CPM, for the operational life and closure of the project. The files shall also contain at least one hard copy of:

1. the facility's Opt-In Application;
2. all amendment petitions and CEC orders;
3. all site-related environmental impact and survey documentation;
4. all appraisals, assessments, and studies for the project;
5. all finalized original and amended structural plans and "as-built" drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project, and
7. the most current versions of any plans, manuals, and training documentation required by the COCs or applicable LORS.

The CEC staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition which includes electronic submission of records to the CEC.

COM-3 Compliance Verification Submittals. Verification lead times associated with the start of construction may require the project owner to file submittals during application or amendment processing, particularly if construction is planned to commence shortly after certification. The verification procedures may be modified as necessary by the CPM after notice to the project owner.

A cover letter from the project owner or an authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line shall identify the project by docket number, cite the appropriate condition of certification number(s), and give a brief description of the subject of the submittal. When submitting supplementary or corrected information, the project owner shall reference the date of the submittal and the condition(s) of certification applicable.

All reports and plans required by the project's COCs shall be submitted in a searchable electronic format (.pdf, MS Word or Excel, etc.) and include standard formatting elements such as a table of contents identifying by title and page number each section, table, graphic, exhibit, or addendum. All report and/or plan graphics and maps shall be adequately scaled and shall include a key with descriptive labels, directional headings, a bar scale, and the most recent revision date.

The project owner is responsible for the content and delivery of all verification submittals to the CPM showing that the actions required by the verification were satisfied by the project owner or an agent of the project owner. All submittals shall be submitted electronically by email.

COM-4 Pre-Construction Matrix and Tasks Prior to Start of Construction. Prior to construction, the project owner shall submit to the CPM a compliance matrix including only those conditions that must be fulfilled before the start of construction. The matrix shall be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first, and shall be submitted in a format similar to the description below.

Site mobilization and construction activities shall not start until the following have occurred:

1. the project owner has submitted the pre-construction matrix and all compliance verifications pertaining to pre-construction COCs; and
2. the CPM has issued an authorization-to-construct letter to the project owner.

The deadlines for submitting various compliance verifications to the CPM allow staff sufficient time to review and comment on, and, if necessary, also allow the project owner to revise the submittal in a timely manner. These procedures help ensure that project construction proceeds according to schedule. Failure to submit required compliance documents by the specified deadlines may result in delayed authorizations to commence various stages of the project.

If the project owner anticipates site mobilization immediately following project certification, it may be necessary for the project owner to file compliance submittals prior to project certification. In these instances, compliance verifications can be submitted in advance of the required deadlines and the anticipated authorizations to start construction. The project owner must understand that submitting items required in compliance verifications prior to these authorizations is at the owner's own risk. Any

approval by CEC staff prior to project certification is subject to change based upon the Commission Decision, or amendment thereto, and early staff compliance approvals do not imply that the CEC will certify the project for actual construction and operation.

COM-5 Compliance Matrix. The project owner shall submit a compliance matrix to the CPM with each MCR and ACR. The compliance matrix shall identify:

1. the technical area (e.g., biological resources, facility design, etc.);
2. the condition number;
3. a brief description of the verification action or submittal required by the condition;
4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Delegate Chief Building Official (DCBO), CPM, or delegate agency, if applicable;
7. the compliance status of each condition (e.g., "not started," "in progress" or "completed" (include the date)); and
8. if the condition was amended, the updated language and the date the amendment was proposed or approved.

The CPM can provide a template for the compliance matrix upon request.

COM-6 Monthly Compliance Report. The first MCR is due one month following the docketing of the project's Decision unless otherwise agreed to by the CPM. The first MCR shall include the docket number and an initial list of dates for each of the events identified on the Key Events List. (The Key Events List form is found at the end of this **Compliance Conditions and Compliance Monitoring Plan** section.) During pre-construction, construction, or closure, the project owner or authorized agent shall submit an electronic searchable version of the MCR to the CPM within 10 business days after the end of each reporting month.

MCRs shall be submitted each month until construction is complete and the final certificate of occupancy is issued by the DCBO. MCRs shall be clearly identified for the month being reported. The MCR shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the MCR. Each of these items shall be identified in the transmittal letter, as well as the conditions they satisfy, and submitted as attachments to the MCR;
3. an initial, and thereafter updated, compliance matrix showing the status of all COCs;

4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to COCs;
7. a listing of any filings submitted to, and permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months; the project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with COCs;
9. a listing of the month's additions to the on-site compliance file; and
10. a listing of incidents, complaints, notices of violation, official warnings, and citations received during the month; a list of any incidents that occurred during the month, a description of the actions taken to date to resolve the issues; and the status of any unresolved actions noted in the previous MCRs.

COM-7 Periodic and Annual Compliance Reports. After construction is complete, the project must submit searchable electronic ACRs to the CPM, as well as other periodic compliance reports (PCRs) required by the various technical disciplines. ACRs shall be completed for each year of commercial operation and are due each year on a date agreed to by the CPM. Other PCRs (e.g. quarterly reports or decommissioning reports to monitor closure compliance), may be specified by the CPM. The searchable electronic copies may be filed on an electronic storage medium or by e-mail, subject to CPM approval. Each ACR must include the docket number, identify the reporting period, and contain the following:

1. an updated compliance matrix which shows the status of all COCs (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the ACR; each of these items shall be identified in the transmittal letter with the condition(s) it satisfies, and submitted as an attachment to the ACR;
4. a cumulative list of all post-certification changes approved by the Energy Commission or the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings submitted to, or permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;

8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the Site Contingency Plan, including amendments and plan updates; and
10. a listing of complaints, incidents, notices of violation, official warnings, and citations received during the year, a description of how the issues were resolved, and the status of any unresolved complaints.

COM-8 Confidential Information. Any information that the project owner designates as confidential shall be submitted to the Energy Commission's Executive Director with an application for confidentiality, pursuant to Title 20, California Code of Regulations, section 2505(a). Any information deemed confidential pursuant to the regulations will remain undisclosed, as provided in Title 20, California Code of Regulations, section 2501 *et seq.*

COM-9 Annual Energy Facility Compliance Fee. Pursuant to the provisions of section 25806(b) of the Public Resources Code, the project owner is required to pay an annually adjusted compliance fee. Current compliance fee information is available on the CEC's website at http://www.energy.ca.gov/siting/filing_fees.html. The project owner may also contact the CPM for the current fee information. The initial payment is due on the date the CEC docket its final Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

COM-10 Amendments, Staff-Approved Project Modifications, and Ownership/Operational Control Changes. The project owner shall petition the CEC, pursuant to Title 20, California Code of Regulations, section 1882, to modify the design, operation, or performance requirements of the project or linear facilities. The CPM will determine whether staff approval will be sufficient, or whether CEC approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1882. Section 1882 details the required contents for a petition to amend a CEC Decision.

For changes in ownership or operational control the existing owner/operator and incoming owner/operator shall jointly in writing notify the CPM, 30 days in advance of the pending change in ownership or operational control, the fact of the change and all relevant contact information. Upon the transition, the new owner/operator will be obligated to comply with all requirements of the certification and will be subject to enforcement actions.

A project owner is required to submit a \$5,000 fee for every petition to amend a previously certified facility, pursuant to Public Resources Code section 25806 (e). If the actual amendment processing costs exceed \$5,000.00, the total PTA reimbursement fees owed by a project owner will not exceed the OPT cap of \$1,050,850, adjusted annually. Current amendment fee information is available on the CEC's website at http://www.energy.ca.gov/siting/filing_fees.html.

COM-11 Reporting of Complaints, Notices, and Citations. Prior to the start of construction or closure, the project owner shall send a letter to property owners within one mile of the project, notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it must include automatic answering with date and time stamp recording.

The project owner shall respond to all recorded complaints within 24 hours or the next business day. The project owner shall post the telephone number onsite and make it easily visible to passersby during construction, operation, and closure. The project owner shall provide the contact information to the CPM and promptly report any disruption to the contact system or telephone number change to the CPM, who will provide it to any persons contacting him or her with a complaint.

Within five business days of receipt, the project owner shall report, and provide copies to the CPM, all complaints, including, but not limited to, noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the Noise and Vibration conditions of certification. All other complaints shall be recorded on the complaint form at the end of this compliance plan. Additionally, the project owner must include in the next MCR, ACR or PCR, copies of all complaints, notices, warnings, citations and fines, a description of how the issues were resolved, and the status of any unresolved or ongoing matters.

COM-12 Emergency Response Site Contingency Plan. No less than 60 days prior to the start of construction (or other CPM-approved) date, the project owner shall submit, for CPM review and approval, an Emergency Response Site Contingency Plan (Contingency Plan). Subsequently, no less than 60 days prior to the start of commercial operation, the project owner shall update (as necessary) and resubmit the Contingency Plan for CPM review and approval. The Contingency Plan shall evidence a facility's coordinated emergency response and recovery preparedness for a series of reasonably foreseeable emergency events. The CPM may require Contingency Plan updating over the life of the facility. Contingency Plan elements include, but are not limited to:

1. a site-specific list and direct contact information for persons, agencies, and responders to be notified for an unanticipated event;
2. a detailed and labeled facility map, including all fences and gates, the windsock location (if applicable), the on and off-site assembly areas, and the main roads and highways near the site;
3. a detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. a description of the on-site, first response and backup emergency alert and communication systems, site-specific emergency response protocols, and procedures for maintaining the facility's contingency response capabilities, including a detailed

map of interior and exterior evacuation routes, and the planned location(s) of all permanent safety equipment;

5. an organizational chart including the name, contact information, and first aid/emergency response certification(s) and renewal date(s) for all personnel regularly on-site;
6. a brief description of reasonably foreseeable, site-specific incidents and accident sequences (on- and off-site), including response procedures and protocols and site security measures to maintain twenty-four-hour site security;
7. procedures for maintaining contingency response capabilities; and
8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific conditions of certification for the technical areas of **Public Health, Solid Waste Management, Hazards, Hazardous Materials, and Wildfire, and Worker Safety and Fire Protection**).

COM-13 Incident-Reporting Requirements. The project owner shall notify the CPM within one hour after it is safe and feasible, of any incident at the facility that results in any of the following:

1. An event of any kind that causes a "Forced Outage" as defined in the CAISO tariff;
2. The activation of onsite emergency fire suppression equipment to combat a fire;
3. Any chemical, gas or hazardous materials release that could result in potential health impacts to the surrounding population; or create an offsite odor issue; and
4. Notification to, or response by, any off-site emergency response federal, state or local agency regarding a fire, hazardous materials release, onsite injury, or any physical or cyber security incident.

Notification shall describe the circumstances, status, and expected duration of the incident. If warranted, as soon as it is safe and feasible, the project owner shall implement the safe shutdown of any non-critical equipment and removal of any hazardous materials and waste that pose a threat to public health and safety and to environmental quality (also, see specific conditions of certification for the technical areas of **Hazards, Hazardous Materials and Wildfire, and Solid Waste Management**).

Within six business days of the incident, the project owner shall submit to the CPM a detailed incident report that includes, as applicable, the following information:

1. A brief description of the incident, including its date, time, and location;
2. A description of the cause of the incident, or likely causes if it is still under investigation;
3. The location of any off-site impacts;

4. Description of any resultant impacts;
5. A description of emergency response actions associated with the incident;
6. Identification of responding agencies;
7. Identification of emergency notifications made to federal, state, and local agencies;
8. Identification of any hazardous materials released and an estimate of the quantity released;
9. A description of any injuries, fatalities, or property damage that occurred as a result of the incident;
10. Fines or violations assessed or being processed by other agencies;
11. Name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and
12. Corrective actions to prevent a recurrence of the incident.

The project owner shall maintain all incident report records for the life of the project, including closure. After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within 48 hours of a request.

If the project owner requests that an incident notification or report be designated as a confidential record and not publicly disclosed, the project owner shall submit copies of notices or reports with an application for confidential designation in accordance with CEC regulations.

COM-14 Non-Operation and Repair/Restoration Plans.

- a. If the facility ceases operation temporarily (excluding planned and unplanned maintenance for longer than one week (or other CPM approved date), but less than three months (or other CPM-approved date), the project owner shall notify the CPM. Notice of planned non-operation shall be given at least two weeks prior to the scheduled date. Notice of unplanned non-operation shall be provided no later than one week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability and reliable and/or improved performance shall be submitted to the CPM within one week after notice of non-operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. Identification of operational and non-operational components of the plant;
2. A detailed description of the repair and inspection or restoration activities;
3. A proposed schedule for completing the repair and inspection or restoration activities;

4. An assessment of whether or not the proposed activities would require changing, adding, and/or deleting any COCs, and/or would cause noncompliance with any applicable LORS; and
 5. Planned activities during non-operation, including any measures to ensure continued compliance with all COCs and LORS.
- b. Written monthly updates (or other CPM-approved intervals) to the CPM for non-operational periods, until operation resumes, shall include:
1. Progress relative to the schedule;
 2. Developments that delayed or advanced progress or that may delay or advance future progress;
 3. Any public, agency, or media comments or complaints; and
 4. Projected date for the resumption of operation.
- c. During non-operation, all applicable COCs and reporting requirements remain in effect. If, after one year from the date of the project owner's last report of productive repair/restoration plan work, the facility does not resume operation or does not provide a plan to resume operation, the Executive Director may assign suspended status to the facility and recommend commencement of permanent closure activities. Within 90 days of the Executive Director's determination, the project owner shall do one of the following:
1. If the facility has a closure plan, the project owner shall update it and submit it for CEC review and approval; or
 2. If the facility does not have a closure plan, the project owner shall develop one consistent with the requirements in this Compliance Plan and submit it for CEC review and approval.

COM-15 Facility Closure Planning. To ensure that a facility's eventual permanent closure and maintenance do not pose a threat to public health and safety and/or to environmental quality, the project owner shall coordinate with the CEC to plan and prepare for eventual permanent closure.

Final Closure Plan and Cost Estimate

- a. No less than one year (or other CPM-approved date) prior to initiating a permanent facility closure, or upon an order compelling permanent closure, the project owner shall submit for CEC review and approval a Final Closure Plan and Cost Estimate, which includes any site maintenance and monitoring.

Prior to submittal of the facility's Final Closure Plan to the CEC, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM may

hold one or more workshops and/or the CEC may hold public hearings as part of its approval procedure.

- b. Final Closure Plan and Cost Estimate contents include, but are not limited to:
 - 1. a statement of specific Final Closure Plan objectives;
 - 2. a statement of qualifications and resumes of the technical experts proposed to conduct the closure activities, with detailed descriptions of previous power plant closure experience;
 - 3. identification of any facility-related installations or maintenance agreements not part of the CEC certification, designation of who is responsible for these, and an explanation of what will be done with them after closure;
 - 4. a comprehensive scope of work and itemized budget for permanent plant closure and site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:
 - a. dismantling and demolition;
 - b. recycling and site clean-up;
 - c. impact mitigation and monitoring;
 - d. site remediation and/or restoration;
 - e. exterior maintenance, including paint, landscaping and fencing;
 - f. site security and lighting; and
 - g. any contingencies.
 - 5. a final cost estimate for all closure activities, by phases, including site
 - a. monitoring and maintenance costs, and long-term equipment
 - b. replacement;
 - 6. a schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the CEC-certified project;
 - 7. an electronic submittal package of all relevant plans, drawings, risk assessments, and maintenance schedules and/or reports, including an above and below-ground infrastructure inventory map and registered engineer's or DCBO's assessment of demolishing the facility;
 - 8. additionally, for any facility that permanently ceased operation prior to submitting a Final Closure Plan and Cost Estimate and for which only minimal or no maintenance has been done since, a comprehensive condition report focused on identifying potential hazards;
 - 9. all information additionally required by the facility's COCs applicable to plant closure;
 - 10. an equipment disposition plan, including:

- a. recycling and disposal methods for equipment and materials; and
 - b. identification and justification for any equipment and materials that will remain on-site after closure.
11. a site disposition plan, including but not limited to proposed rehabilitation, restoration, and/or remediation procedures, as required by the COCs and applicable LORS, and site maintenance activities;
 12. identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse impacts to a less-than-significant level. Potential impacts to be considered shall include, but not be limited to:
 - a. traffic;
 - b. noise and vibration;
 - c. soil erosion;
 - d. air quality degradation;
 - e. solid waste;
 - f. hazardous materials;
 - g. waste water discharges; and
 - h. contaminated soil;
 13. identification of all current conditions of certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and
 14. proposed strategies for achieving and maintaining compliance during closure;
 15. updated mailing list and Listserv of all responsible agencies, potentially interested parties, and property owners within one mile of the facility;
 16. identification of alternatives to plant closure and assessment of the feasibility and environmental impacts of these; and
 17. description of and schedule for security measures and safe shutdown of all non-critical equipment and removal of hazardous materials and waste (see COCs **Public Health, Solid Waste Management, Hazards, Hazardous Materials, and Wildfire, and Worker Safety and Fire Protection**).

If the CEC-approved Final Closure Plan and Cost Estimate procedures are not initiated within one year of the plan approval date, it shall be updated and re-submitted to the CEC for supplementary review and approval. If a project owner initiates but then suspends closure activities, and the suspension continues for longer than one year, the CEC may initiate corrective actions against the project owner to complete facility closure. The project owner remains liable for all costs of contingency planning and closure.

Upon approving the project owner's final closure plan, the CEC may direct that the facility's certification be terminated at the time staff finds the closure process contained in the plan has been completed.

KEY EVENTS LIST

PROJECT: Darden Clean Energy Project

DOCKET #: 23-OPT-02

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
On-line Date	
POWER PLANT SITE ACTIVITIES	
Start Site Assessment/Pre-construction	
Start Site Mobilization/Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Start/Energizing of PV Array or BESS	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start Transmission Line Construction	
Complete Transmission Line Construction	
Synchronization with Grid and Interconnection	
WATER SUPPLY LINE ACTIVITIES	
Start Water Supply Line Construction	
Complete Water Supply Line Construction	
Start Recycled Water Supply Line Construction	
Complete Recycled Water Supply Line Construction	

COMPLAINT LOG NUMBER: _____ DOCKET NUMBER: _____

PROJECT NAME: _____

COMPLAINANT INFORMATION

NAME: _____ PHONE NUMBER: _____

ADDRESS: _____

COMPLAINT

DATE COMPLAINT RECEIVED: _____ TIME COMPLAINT RECEIVED: _____

COMPLAINT RECEIVED BY: _____ ☐ TELEPHONE ☐ IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE: _____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION): _____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL: _____

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? ☐ YES ☐ NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS: _____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION: _____

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN: _____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED: _____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____

OTHER RELEVANT INFORMATION: _____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE: _____ DATE: _____

Section 10

Mandatory Opt-In Requirements

10 Mandatory Opt-In Requirements

10.1 “Facility” Definition Met

Summary of Requirements

The California Energy Commission (CEC) has jurisdiction to certify certain non-fossil-fueled power plants, energy storage facilities, the electric transmission lines from these facilities to the first point of interconnection, and related manufacturing facilities.¹ A developer with a qualifying project may optionally file with the CEC to obtain a certification to construct and operate the project. The CEC is the “lead agency” under the California Environmental Quality Act (CEQA) and is required to prepare an environmental impact report, or Initial Study, for any facility that elects to opt-in to the CEC’s jurisdiction. With exceptions, the issuance of a certificate by the CEC for an eligible facility is in lieu of any permit, certificate, or similar document required by any state, local, or regional agency, or federal agency to the extent permitted by federal law, and supersedes any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law.

A qualified opt-in project must meet one or more of the definitions of a “facility”²:

1. A solar photovoltaic or terrestrial wind electrical generating powerplant with a generating capacity of 50 megawatts or more and any facilities appurtenant thereto.
2. An energy storage system³ that can store 200 megawatt hours or more of electrical energy.
3. A stationary electrical generating powerplant using any source of thermal energy, with a generating capacity of 50 megawatts or more, excluding any powerplant that burns, uses, or relies on fossil or nuclear fuels.
4. A discretionary project⁴ for which the applicant has certified that a capital investment of at least two hundred fifty million dollars will be made over a period of five years.⁵ The applicant must additionally provide what the facility would manufacture, produce, or assemble, and how the facility’s products or services would be used in the manufacture, production, or assembly of the following:
 - a. Energy storage systems or component manufacturing;
 - b. Wind systems or component manufacturing;

1 Pub. Resources Code, § 25545.1

2 Pub. Resources Code, § 25545(b)

3 Pub. Util. Code, § 2835

4 Pub. Resources Code, § 21080

5 Pub. Resources Code, § 25545(b)(4)

- c. Solar photovoltaic energy systems or component manufacturing; or
 - d. Specialized products, components, or systems that are integral to renewable energy or energy storage technologies.⁶
5. An electric transmission line carrying electric power from a facility described in paragraph (1), (2), or (3) that is located in the state to a point of junction with any interconnected electrical transmission system.
6. A hydrogen production facility and associated onsite storage and processing facilities that do not derive hydrogen from a fossil fuel feedstock and that receive funding from any of the following:
- a. The Hydrogen Program established pursuant to Section 25664.1.
 - b. Section 91530, as added by the Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024 (Section 2 of Chapter 83 of the Statutes of 2024 (Senate Bill (SB) 867), if that act is approved by the voters at the November 5, 2024, statewide general election.
 - c. The Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) authorized by Article 15 (commencing with Section 12100.160) of Chapter 1.6 of Part 2 of Division 3 of Title 2 of the Government Code, as awarded by the United States Department of Energy Office of Clean Energy Demonstrations.

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff proposes the following findings:

- 1. The Project is a solar photovoltaic electrical generating facility with a generating capacity of 1,150 megawatts (MWs), thus exceeding the minimum 50 MW threshold required to meet the definition of a facility.
- 2. The Project would include an up to 4,600 MW-hour battery energy storage system, thus exceeding the minimum 200 MW-hour threshold required to meet the definition of a facility.

Conclusions

Based on the foregoing findings, staff concludes the Project meets one or more of the definitions of a "facility," as required under Public Resources Code section 25545(b) and recommends the CEC may adopt these proposed findings and conclusions as they are supported by substantial evidence in the record.

6 Cal. Code Regs., tit. 20, § 1877(b)

10.2 Requirements for Covered Project Under the Labor Code

Summary of Requirements

Public Resources Code sections 25545.3.3 and 25545.3.5 require the applicant to certify that either the entirety of the construction of the project is a public work for purposes of Chapter 1 (commencing with section 1720) of Part 7 of Division 2 of the Labor Code, or the construction of the project is not in its entirety a public work for which prevailing wages must be paid, but all construction workers employed on the project will be paid at least the general prevailing rate of per diem wages. In addition, the applicant must certify that a skilled and trained workforce will be used to perform all construction work.

Proposed Finding of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff concludes the following facts are supported by substantial evidence in the record:

1. In Appendix G of the Opt-In application (RCI 2023e) the applicant certified that construction of the covered project is not in its entirety a public work for which prevailing wages must be paid under Article 1 (commencing with Section 1720) of Chapter 1 of Part 7 of Division 2 of the Labor Code, but applicant has certified that all construction workers employed on the project will be paid at least the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations pursuant to Sections 1773 and 1773.9 of the Labor Code, except that apprentices registered in programs approved by the Chief of the Division of Apprenticeship Standards may be paid at least the applicable apprentice prevailing rate.
2. Applicant further certifies that, for the portion(s) of the project that are not a public work for which prevailing wages must be paid under Article 1 (commencing with Section 1720) of Chapter 1 of Part 7 of Division 2 of the Labor Code, it will comply with the following statutory requirements, as applicable:
 - a. Applicant shall ensure that the prevailing wage requirement is included in all contracts for the performance of all construction work.
 - b. All contractors and subcontractors shall pay to all construction workers employed in the construction of the project at least the general prevailing rate of per diem wages. Apprentices registered in programs approved by the Chief of the Division of Apprenticeship Standards may be paid at least the applicable apprentice prevailing rate.
 - c. All contractors and subcontractors performing construction work on the project shall employ apprentices at no less than the ratio required in the Labor Code section 1777.5.
 - d. All contractors and subcontractors performing construction work shall maintain and verify payroll records pursuant to the Labor Code section 1776, make those

records available for inspection and copying as provided therein and furnish those payroll records to the Labor Commissioner pursuant to Labor Code section 1771.4.

- e. Contractors and subcontractors performing construction work on the project may be subject to a Project labor agreement. The project labor agreement shall include, but is not limited to, all of the following:
 - i. Prevailing wages provisions applicable to all construction workers employed in the construction of the project and an arbitration procedure.
 - ii. Target hiring provisions as required under Public Resources Code section 25545.3.3(b)(6)(B).
 - iii. Apprenticeship utilization provisions committing to increasing the share of work performed by state-registered apprentices above the state-mandated minimum ratio required in the Labor Code section 1777.5.
 - iv. Apprenticeship utilization provisions committing to hiring and retaining a certain percentage of state-registered apprentices that completed the Multi-Craft Core pre-apprenticeship training as defined in the Unemployment Insurance Code section 14005(t).

Conclusions

Based on the foregoing certifications, staff concludes the record contains substantial evidence to support a proposed finding of compliance with Public Resources Code section 25545.3.3. In addition, to comport with section 25545.3.3, staff proposes Conditions of Certification (COC) **LABOR-1** requiring compliance with the wage and related conditions as set forth in this finding.

LABOR-1 The project owner shall implement the construction labor requirements of Public Resources Code section 25545.3.3.

Verification: Upon request by the Compliance Project Manager (CPM), the project owner shall provide documentation evidencing compliance with the requirements of Public Resources Code section 25545.3.3.

10.3 Identification of Whether Site is Located at a Prohibited Area

Summary of Requirements

The opt-in applicant must identify whether the project is located on a prohibited site as identified in Public Resources Code section 25527 or on a site designated by the California Coastal Commission under Public Resources Code section 30413(b) or on a site designated by the San Francisco Bay Conservation and Development Commission under Government Code section 66645(b). For projects on such a site, the opt-in application shall include documentation of the approval of the public agency having

ownership or control of the land.⁷

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions because the record contains substantial evidence for their support:

- As part of its application, the applicant has identified that the project is located in a mostly retired agricultural area of unincorporated Fresno County south of the community Cantua Creek. The Project site is not located on a prohibited site identified in Public Resources Code section 25527, which includes a state, regional, County, or city park; wilderness, scenic, or natural reserve, area for wildlife protection, recreation, historic preservation; or natural preservation area. Similarly, consistent with Public Resources Code section 25527, there are no estuaries in an essentially natural and undeveloped state on the Project site. The Project is not located on a site designated by the San Francisco Bay Conservation and Development Commission as identified in Public Resources Code section 66645(b). The Project site is not located in a coastal zone.

Conclusions

Based on the location of the project, staff has concluded that the site is not within a prohibited site as identified in Public Resources Code section 25527 or on a site designated by the California Coastal Commission under Public Resources Code section 30413(b) or on a site designated by the San Francisco Bay Conservation and Development Commission under Government Code section 66645(b). Staff recommends the CEC may adopt this proposed finding and conclusion as it is supported by substantial evidence in the record.

10.4 Net Positive Economic Benefit to the Local Government

Summary of Requirements

Public Resource Code section 25545.9 states:

"The commission shall not certify a site and related facility under this chapter unless the commission finds that the construction or operation of the facility will have an overall net positive economic benefit to the local government that would have had permitting authority over the site and related facility."

Economic benefits may include, but are not limited to, employment growth, housing development, infrastructure and environmental improvements, assistance to public

7 Cal. Code Regs., tit. 20, § 1877(e)

schools and education, assistance to public safety agencies and departments, and property taxes and sales and use tax revenues.⁸

The local government that would have had permitting authority is Fresno County. Thus, the record must contain substantial evidence to support a finding that the project will result in a net positive economic impact to Fresno County for the CEC to approve the project.

Staff Assessment of Net Economic Benefits

The applicant's net economic benefits assessment is contained in a report titled, *Darden Project Fresno County Net Economic Benefit* (RCI 2023q), which finds that the project is expected to have a total investment of approximately \$3 billion, including \$319 million direct investment in the in the state of California upon the completion of construction. The report notes that the project will establish the point of sale for most major project services and equipment in Fresno County, ensuring sales taxes accrue locally.

The report does not address any costs to Fresno County from the project thus, the numbers provided do not reflect a net analysis. The report concludes, "The infusion of this capital will not only drive local job creation and provide significant funds directly to local and state government but will also stimulate the local economy indirectly through the economic activity of laborers and the growth of nearby businesses."

The applicant's Socioeconomic Report (RCI 2023qq) includes additional information on project's fiscal impacts to the County. The report identified a positive economic impact from the construction and operation of the project based on estimates of \$33 million in sales tax during construction and \$1,800,000 a year during operations. In addition, a one-time school fee of \$14,000 would be paid to the local school district.

The report states that project construction could result in increased demand for law enforcement, fire protection, and Emergency Medical Services (EMS) services, and especially notes that the County Sheriff is operating at or above capacity. The report does not suggest services would be increased to cover project needs.

The Fresno County Fire Protection District (FCFPD) submitted comments on the Darden Clean Energy Project (DCEP or project) (Fresno 2025a) regarding the project's fiscal impacts on the fire protection district. The comments note FCFPD is predominantly funded through property taxes and that 62 percent of the FCFPD jurisdiction falls into the Williamson Act which reduces property taxes by as much as 80 percent. With the proposed solar project 100 percent tax exempt, this correlates to zero dollars of revenue for fire protection services. The FCFPD notes that when incidents occur at the project site, this would remove a resource from paying constituents. A project of this scope and size adds a substantial response burden to the currently idle land.

8 Cal. Code Regs., tit. 20 § 1879(a)(7); Pub. Resources Code § 25545.9

As detailed in **Section 4.4 Worker Safety and Fire Protection**; to reduce the need for emergency services, staff proposes in COCs **Worker Safety-1 and Worker Safety-2**, the applicant develop multiple safety related plans and protocols. To mitigate this fiscal impact to the FCFPD, staff proposes COC **WORKER SAFETY-12**, requiring the project owner to reach an agreement with the FCFPD regarding funding to offset direct and cumulative project-related impacts.

In **Section 5.7 Hazards, Hazardous Materials/Waste, and Wildfire**, CEC staff finds that with the implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**, and **MM HAZ-2**. The project construction and operation would not expose people or structures to significant risks from wildfires, further reducing the need for local emergency services.

To address the requirements of Public Resources Code section 25545.9, CEC staff considered the information provided in the Net Economic Benefit Report, the Socioeconomic Report, and other information filed in the docket. Staff worked with Life Cycle Associates (LCA) to prepare an independent assessment of net economic benefits from the construction and operations of the proposed DCEP, see **Appendix C**.

LCA developed a renewable energy input/output model (RE model) to demonstrate the local in state (within California) net economic benefits from DCEP to the community (Fresno County). LCA used input assumptions from the project developer to estimate gross economic impacts to Fresno County from DCEP, and then compared these impacts to the potential gross impacts assuming the project is not built- and the land remains undeveloped. LCA then subtracts the gross economic impacts of no project (undeveloped land) from the gross economic impacts of building and operating DCEP to estimate net economic impacts from the project to Fresno County.⁹ LCA assumes no other project is built at this site if DCEP is not built.

The RE model breaks down the construction and operations activities of DCEP into components to estimate their economic impacts to Fresno County:

- Plant investment hardware (capital cost of DCEP subject to local taxes)
- Plant Installation (installation costs and utility interconnection fees)
- Maintenance (ongoing over life of DCEP)
- Plant Earnings (DCEP selling excess power back to the grid, from photovoltaic (PV) and battery energy storage systems (BESS))
- Government permitting fees

⁹ In this case, LCA is viewing net economic benefits as the benefits of building DCEP versus doing nothing with the potential site (or leaving the undeveloped land undeveloped). This is not 'net' in the sense of looking at gross economic benefits to Fresno County of building DCEP and subtracting off any gross costs to Fresno County from building DCEP.

- Government revenue (annual revenues from DCEP, subject to local tax rate)
 - Revenues include DCEP selling electricity into the market from the PV and the BESS facilities
- Local property tax (local tax applied to the installation component of DCEP)
- Sales tax on installation (sales tax applied to the installation component of DCEP)

LCA estimates the economic impacts to the local community (Fresno County) by applying local tax values from the assessor's office and local share allocations based on values from the DCEP application to the total economic value for the categories above.¹⁰

From the local project value estimates, the RE Model then applies economic multipliers to estimate indirect and induced benefits (from the direct benefits) across each category, then sums these up for the total net economic impact to Fresno County.

To summarize, first, LCA estimated gross economic benefits from construction and operations of DCEP (over the life of the project, 35 years). Next, LCA estimates gross economic impacts from leaving the land undeveloped. Then, LCA subtracts the gross impacts from the undeveloped land case from case where DCEP is developed. This final value provides an estimate of net economic benefits for building and operating DCEP. Net in this case means building and operating DCEP versus not building it; 'net' here does not mean the benefits to Fresno County after subtracting cost to the county from building and operating DCEP. Staff selected this approach in calculating net economic impact because the county costs that were identified in the record such as impacts to public services such as schools, police and fire, are addressed through the payment of a required school fee or through mitigation imposed through the conditions of certification. Therefore, considering the fiscal impacts to the County of the land as is verses the land with the project is a reasonable approach to quantify the economic benefits to the County.

The two cases that estimate gross economic benefits are described below:

- **Leaving the Land Undeveloped.** For this case, LCA assumes the land remains undeveloped retired farmland and there is a relatively small negative impact to property taxes and a cost to the county for ongoing maintenance of the undeveloped land. Over the same time frame as the project (35 years), LCA estimates a negative economic impact of about \$2,400,000 to Fresno County.
- **Constructing and Operating DCEP.** Assuming DCEP is developed, LCA estimates the total gross economic impacts to Fresno County are \$171,700,000, over the life of the project.

¹⁰ Local share represents the materials, equipment, and labor that is produced within Fresno County, that will provide economic benefits to that community. Local share estimates are needed as some of the DCEP labor, equipment, and materials will be produced outside Fresno County and not provide economic benefits to the community.

Subtracting the gross benefits of building and operating DCEP from those of leaving the land undeveloped results in estimated positive net economic benefits of about \$169,300,000 over the life of the project (net for building versus not building the project, not net as in subtracting costs to Fresno County from the DCEP). LCA also considered a more conservative scenario where DCEP does not earn any revenue from selling power back to the grid. In this scenario DCEP still produces large economic benefits over its lifetime (\$153,000,000).

Proposed Finding of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff proposes the following findings:

The following includes information from the applicant's Socioeconomics Report prepared by ECONorthwest (RCI 2023qq), staff analysis including analysis from LCA
(Appendix C):

1. For the local government (Fresno County), sales tax generated from the construction phase of the solar facility, battery energy storage system, step-up substation, and generation-intertie line could total \$23.1 million across the 18-month construction schedule or \$22.8 million across the 36-month construction schedule.
2. Over the life of the project, operation of the solar facility, battery energy storage system, step-up substation, operations and maintenance (O&M) facility, and generation-intertie line are likely to contribute to an increase in property tax revenue collections to Fresno County, although too many uncertainties exist to quantify the expected increase and when it would occur.
3. While not a direct benefit to Fresno County, project construction is estimated to directly generate 2,280 jobs over the 18-month construction schedule, and 2,530 jobs over the 36-month construction schedule. Employee compensation is projected to be almost \$206 million over the 18-month period and \$ 230 million of the 36-month period. Economic output is projected to be \$ 893 million over the 18-month period and similarly \$894 over the 36-month period.
4. Project construction is estimated to indirectly generate 1,140 jobs over the 18-month construction schedule and the 36-month construction schedule. Over the 18-month schedule, construction of the project is projected to generate \$78 million in employee compensation and \$76 million over the 36-month schedule. For economic output, the 18-month schedule is projected to generate \$279 million and for the 36-month schedule it will generate \$269 million.
5. Also, not a direct benefit to Fresno County, project operation and maintenance is estimated to directly generate 16 jobs and indirectly generate 44 jobs. No estimates of employee compensation or economic output were provided for the full facility (only the PV portion).

6. Project operation and maintenance will generate approximately \$1.8¹¹ million in annual sales tax revenue for Fresno County.
7. LCA created a renewable energy input/output model to estimate economic impacts from construction and operation of the DCEP and then found, on a net present value basis, that the proposed project would generate about \$169 million in economic benefits to Fresno County. This estimate of economic benefits does not include potential costs to Fresno County (increased law enforcement need and wildfire risk mitigation and prevention costs).
8. CEC staff found that potential cost to Fresno County for increased wildfire risk mitigation and prevention costs would be less than significant with incorporation of staff proposed COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**, and staff recommended **MM HAZ-2**.
9. The proposed solar project component of DCEP is 100 percent tax exempt, this correlates to zero dollars of revenue for fire protection services. To mitigate potential fiscal impacts to the FCFPD, staff proposes COC **Worker Safety-12** which requires the DCEP project owner to reach an agreement with the FCFPD regarding funding to offset direct and cumulative project-related impacts.

Conclusions

Construction and operation of the facility would result in an overall positive economic benefit to Fresno County of roughly \$169 million (net present value) as opposed to the project site's current limited agriculture use. Although potential costs to the County from providing police, fire and emergency services to the project have been identified, proposed mitigation measures address those costs and thus, staff finds that potential costs are less than significant with mitigation measures. Therefore, with incorporating mitigation measures, the potential costs to Fresno County are expected to be minor compared to the identified economic benefits. Over its life, the proposed DCEP is expected to produce positive net economic benefits to Fresno County. Staff recommends the CEC may adopt this proposed finding and conclusion as it is supported by substantial evidence in the record.

10.5 Legally Binding Enforceable Agreement(s) for Community Benefits of the Project

Summary of Requirements

Public Resources Code section 25545.10(a) states that the CEC shall not certify a site and related facility unless the CEC finds that the applicant has entered into one or more legally binding and enforceable agreements with, or that benefit, a coalition of one or

¹¹ The \$1.8 million sales tax estimate from the applicant was for the whole project when it included hydrogen. The PV facility, step-up substation, and gen-tie are expected to produce \$1.3 million, the BESS is expected to produce \$451,000, and no value was given for the utility switchyard or hydrogen facility (but the applicant expected it to be positive).

more community-based organizations, such as workforce development and training organizations, labor unions, social justice advocates, local governmental entities, California Native American tribes, or other organizations that represent community interests, where there is mutual benefit to the parties to the agreement.¹²

The topics and specific terms in the community benefits agreements may vary and may include workforce development, job quality, and job access provisions that include, but are not limited to, any of the following¹³:

1. Terms of employment, such as wages and benefits, employment status, workplace health and safety, scheduling, and career advancement opportunities.
2. Worker recruitment, screening, and hiring strategies and practices, targeted hiring planning and execution, investment in workforce training and education, and worker voice and representation in decision making affecting employment and training.
3. Establishing a high road training partnership, as defined in Section 14005 of the Unemployment Insurance Code.

The topics and specific terms in the community benefits agreement may also include, but not be limited to, funding for or providing specific community improvements or amenities such as park and playground equipment, urban greening, enhanced safety crossings, paving roads and bike paths, and annual contributions to a nonprofit or community-based organization that awards grants to organizations delivering community-based services and amenities (Pub. Resources Code § 25545.10(b)).

The topics and specific terms in agreements with California Native American tribes may include, but not be limited to, cultural preservation and revitalization programs, joint management and stewardship agreements, open-space preservation agreements, repatriation and reparations agreements, and other compensatory mitigation programs (Pub. Resources Code § 25545.10(c)).

The applicant has submitted executed agreements with the following organizations: Centro La Familia Advocacy, Tree Fresno, Central California Food Bank, Westside Elementary School, Central California Asthma Collective, Cornell University, Fresno Rural Transit Agency, and Fresno Housing Education Corps.

Proposed Findings of Fact

Based on the information provided in the application, submitted executed agreements and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions because the record contains substantial evidence for their support:

¹² Pub. Resources Code, § 25545.10(a)

¹³ Id.

1. The applicant has entered into a legally binding and enforceable agreement with the Centro La Familia Advocacy Services, a California 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). Centro La Familia Advocacy offers a broad range of programs designed to assist crime victims, support families and children, promote health and wellness, encourage civic engagement by way of providing outreach, advocacy and education services to those in need. The organization is located in Fresno, California, which is part of Fresno County, California.

The applicant has identified the following mutual benefit(s) to the parties of the agreement: Centro La Familia Advocacy will benefit by receiving a charitable donation that will help support their wide-ranging programs to assist crime victims, promote family wellness, and encourage civic engagement in rural communities. This partnership will also allow the Applicant to satisfy the requirements of Public Resources Code section 25545.10 in furtherance of developing the Project in accordance with State of California's renewable energy goals.

While the applicant has entered into additional agreements with the entities described below, all of which are qualifying community-based organizations under Public Resources Code section 25545.10, the agreements contain language in Section 8 that allows the applicant to terminate at any time ending any obligation to provide funds. Thus, these agreements do not meet the requirement in Public Resources Code section 25545.10 for the agreement to be legally binding and enforceable.

1. Tree Fresno, a California 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). Tree Fresno aims to transform the San Joaquin Valley with trees, greenways, and beautiful landscapes.
2. Central California Food Bank, a California 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). Central California Food Bank is the largest food bank in the Central Valley.
3. Westside Elementary School, a 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). Westside Elementary School is a public elementary school.
4. Central California Asthma Collective, a California 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). Central California Asthma Collective has a mission to reduce the burden of asthma and related chronic health conditions on residents of the San Joaquin Valley through education and interventions, along with strong climate and air pollution policy analysis, advocacy, and intervention.
5. Cornell University, a California 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). The funds shall be directed to the Renewable Energy Ecology Fund.

6. Fresno Rural Transit Agency, a California Joint Powers Agency which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). The Fresno Rural Transit Agency provides local and regional transit services to rural cities within Fresno County.
7. Fresno Housing Education Corps, a California 501(c)(3) non-profit organization which is a qualified community-based advocacy organization under Public Resources Code section 25545.10(a). Fresno Housing Education Corps is an education scholarship program that benefits local high school students pursuing higher education opportunities.

Conclusions

Based on the foregoing proposed findings, staff concludes the applicant has entered into one or more legally binding and enforceable agreements with, or that benefit a coalition of one or more community-based organizations as specified in Public Resources Code section 25545.10. Therefore, staff recommends the CEC adopt proposed findings and conclusions consistent with staff's recommendation based on the identified evidence in the administrative record.

10.6 Identification of Public Agencies that Received Notice of the Application

Summary of Requirements

Consistent with Public Resources Code section 25519 and 25545.8, CEC staff notified the following agencies of the opt-in application: Fresno County (various departments), California Department of Fish and Wildlife, Department of Toxic Substances Control, State Water Resources Control Board, Central Valley Regional Water Quality Control Board, California Public Utilities Commission, California Attorney General, California Office of Emergency Services, California Department of Forestry and Fire Protection, California Department of Transportation, Native American Heritage Commission, Office of Land Use and Climate Innovation, U.S. Army Corps of Engineers, California State Parks, Bureau of Land Management, and United States Fish and Wildlife Service.

10.7 Environmental Leadership Development Project Requirements

Summary of Requirements

An opt-in application is deemed an environmental leadership development project certified by the Governor and eligible for streamlined procedures,¹⁴ if the CEC verifies that the project meets the conditions under Public Resources Code section 21183 and

14 Pub. Resources Code, §§ 21178 et seq.

mitigates greenhouse gas (GHG) impacts as required under Public Resources Code section 21183.6.¹⁵

Under Public Resources Code section 21183 the following conditions must be met:

1. The Project will result in a minimum investment of \$100,000,000 in California upon completion of construction.
2. The project creates high-wage, highly skilled jobs that pay prevailing wages and living wages, provides construction jobs and permanent jobs for Californians, helps reduce unemployment, and promotes apprenticeship training as defined in Public Resources Code section 21183.5.
3. For environmental leadership development projects¹⁶, including a wind or solar energy project or a project that manufactures products, equipment, or components used for renewable energy generation, or energy efficiency, the project does not result in any net additional emission of GHG, including GHG emissions from employee transportation, as determined by compliance with Public Resources Code section 21183.6.
4. The applicant demonstrates compliance with the requirements of recycling commercial solid waste and organic solid waste as required under Chapter 12.8 (commencing with Section 42649) and Chapter 12.9 (commencing with Section 42649.8) of Part 3 of Division 30, as applicable.
5. The applicant has entered into an agreement that all mitigation measures required to certify the project must be conditions of approval of the project. For environmental mitigation measures, the applicant agrees that those measures will be monitored and enforced by the lead agency for the life of the obligation.
6. The applicant agrees to pay the costs of the trial court and the court of appeal in hearing and deciding any case challenging a lead agency's action on the certified project.
7. The applicant agrees to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project under this division.
8. The applicant demonstrates that the record of proceedings is being prepared in accordance with Public Resources Code section 21186.

Under Public Resources Code section 21183.6, quantification and mitigation of impacts of environmental leadership development projects¹⁷ including a solar energy project from the impacts of GHG must be as follows:

¹⁵ Cal. Code Regs., tit. 20, § 1877(h); Pub. Resources Code § 25545.13

¹⁶ Pub. Resources Code, § 21180(1), (2), and (3)

¹⁷ Id.

1. The environmental baseline for GHG emissions be based on the physical environmental conditions in the vicinity of the project site at the time the application is submitted.¹⁸
2. The mitigation of the impacts resulting from the emissions of GHG must be achieved in accordance with the following priority:
 - a. Direct emissions reductions from the project that also reduce emissions of criteria air pollutants or toxic air contaminants through implementation of project features, project design, or other measures, including, but not limited to, energy efficiency, installation of renewable energy electricity generation, and reductions in vehicle miles traveled.
 - b. The remaining unmitigated impacts shall be mitigated by direct emissions reductions that also reduce emissions of criteria air pollutants or toxic air contaminants within the same air pollution control district or air quality management district in which the project is located.
 - c. The remaining unmitigated impacts shall be mitigated through the use of offsets that originate within the same air pollution control district or air quality management district in which the project is located, consistent with the Health and Safety Code¹⁹, including, the requirement that the offsets be real, permanent, quantifiable, verifiable, and enforceable, and shall be undertaken from sources in the community in which the project is located or in adjacent communities.
 - d. The remaining unmitigated impacts shall be mitigated using of offsets that originate from sources that provide a specific, quantifiable, and direct environmental and public health benefit to the region in which the project is located.

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions because the record contains substantial evidence for their support.

Public Resources Code Section 21183 Required Proposed Findings

1. The project will result in a minimum investment of \$100,000,000 in California upon completion of construction.
2. The applicant has identified that construction of the project would generate employment Project construction is estimated to directly generate 2,260 jobs over

¹⁸ Cal. Code Regs., tit. 14, § 15125

¹⁹ Pub. Resources Code, § 38500

the 18-month construction schedule, and 2,510 jobs over the 36-month construction schedule. (RCI 2023qq).

- a. The applicant has certified that these workers will be paid prevailing wages and living wages as evident by their employment agreements.
 - b. Operation of the Project would employ a full-time workforce of 16 employees and will therefore provide permanent jobs for Californians. The applicant certifies that it plans to promote apprenticeship training.
 - c. The proposed project is a solar facility and is therefore a qualified environmental leadership development project under Public Resources Code section 21180(b)(1), (2), or (3).
3. As described in the Air Quality and Greenhouse Gas Emissions sections and the Greenhouse Gas Study (Appendix N), by displacing energy from natural gas powerplants, the project would not result in any net additional emissions of GHG. Therefore, the project complies with Public Resources Code section 21183.6 (RCI 2023q).
4. In order to comply with recycling commercial solid waste and organic solid waste requirements under Public Resources Code sections 42649 and 42649.8, as applicable the applicant would ensure that recycling of commercial and organic waste are stipulations in the construction contractor's contract. Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non- recyclable items and stored until they could be transported to a designated recycling facility. Recycling would be in accordance with applicable California state requirements. Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. Other compostable materials, such as vegetation, may also be composted off-site. Non-hazardous construction materials that cannot be reused or recycled would likely be disposed of at a Class II/III landfill. Hazardous waste and electronic waste would not be placed in a landfill but rather would be stored onsite for less than 90 days and would be transported to a treatment, storage, and disposal facility by a licensed hazardous waste transporter. All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste. The potential waste streams that would be generated during construction and operation of the Project, the waste classifications, and disposal facilities in the vicinity of the Project are detailed in Section 5.11 Waste Management of the Opt-In Application package. Furthermore, the Project must comply with the California Green Building Standards Code, also known as CALGreen, which includes mandatory recycling. Code Section 5.408 requires that 65 percent of the nonhazardous waste be recycled or salvaged for reuse. Code Section 5.408.3 (excavated soil and land clearing debris) requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting from land clearing shall be reused or recycled.

5. Upon certification of this project the applicant will have entered into an agreement that any and all mitigation measures contained within the Final Decision of certification will be conditions of approval of the project. The CEC will monitor and enforce the mitigation measures for the lifetime of the project.
6. The applicant has agreed to pay the potential costs of the trial court and the court of appeal in hearing and deciding any case challenging the CEC's action on the certified project.
7. The applicant has agreed to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project.
8. The preparation and certification of the record of proceedings for this project complies with Public Resources Code section 21186.

Public Resources Code Section 21183.6 Required Proposed Findings

1. The application demonstrates that the environmental baseline for greenhouse gas emissions was based on the physical environmental conditions in the vicinity of the project site when the application was submitted on November 7, 2023.
2. This document requires any and all mitigation measures resulting from the emissions of greenhouse gases to be in accordance with the priorities outlined in Public Resources Code section 21183.6.

Conclusions

Staff has verified and concluded that the record contains evidence to support a finding that the project meets the requirements of, and may be deemed, an environmental leadership development project under Public Resources Code section 21183. In addition, staff proposes COC **WASTE-1** and recommends **MM WASTE-1** (for the PG&E utility switchyard and downstream network upgrades) requiring compliance with solid waste management mitigation measures required to certify the project, as set forth in this proposed finding.

Staff has also verified and concluded that the record contains evidence to support a finding that the impacts of greenhouse gas emissions were quantified and mitigated in a manner consistent with Public Resources Code section 21183.6, and therefore staff recommends that the CEC may adopt this proposed finding and conclusion.

10.8 Potential for Restoring the Site if Application Rejected

Summary of Requirements

As part of the opt-in application the applicant must demonstrate the potential for restoring the site as necessary to protect the environment if the CEC denies approval of the application.²⁰

20 Cal. Code Regs., tit. 20, § 1879(a)(3); Pub. Resources Code, § 25523(e)

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff proposes the following findings:

1. Project site preparation and construction would not begin prior to application approval and thus restoration work would not be necessary.

Conclusions

Staff concludes that the applicant has sufficiently evaluated and identified the potential for restoring the project site as required under California Code of Regulations, title 20, section 1879(a)(3) and therefore staff recommends that the CEC may adopt this proposed finding and conclusion.

10.9 Minimum Standards of Efficiency

Summary of Requirements

The applicant must demonstrate compliance with the recommended minimum standards of efficiency for the operation of a new facility at a particular site that are technically and economically feasible, as required under Public Resources Code section 25402(d). The applicant must certify that standards recommended by the CEC have been considered, which certification shall include a statement specifying the extent to which conformance with the recommended standards will be achieved.²¹

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions because the record contains substantial evidence for their support:

The CEC has not recommended minimum standards of efficiency for the proposed project. The applicant is not required to demonstrate compliance with minimum efficiency standards, as no minimum efficiency standards have been applied to this project.

Conclusions

Based on the foregoing proposed findings, the applicant is not required to demonstrate compliance with minimum efficiency standards, as no efficiency standards apply to this project. Therefore, staff proposes the CEC may adopt this finding and conclusion as it is supported by substantial evidence in the record.

²¹ Cal. Code Regs., tit. 20 § 1879(a)(1); Pub. Resources Code, § 25523(d)

10.11 References

- Fresno 2025a – Fresno County Fire Protection District (TN 261486). Comments from Fresno County Fire Protection District on Darden Clean Energy Project. Dated January 31, 2025. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023cc – Rincon Consultants, Inc. (TN 252982). Section 5-11 Waste Management. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023e – Rincon Consultants, Inc. (TN 252922). Appendix G Public Resources Code Section Certifications. Dated November 3, 2023. Accessed online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023l – Rincon Consultants, Inc. (TN 252933). Section 5-17 Wildfire. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023jj – Rincon Consultants, Inc. (TN 253025). Section 5-6 Socioeconomics. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023k – Rincon Consultants, Inc. (TN 252932). Section 5-10 Worker Safety. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023m – Rincon Consultants, Inc. (TN 252934). Section 5-16 Geological Hazards and Resources. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2024m – Rincon Consultants, Inc. (TN 255907). Data Response Set 3 Appendix A – SJVACPD Preliminary Draft Permit Application Vol 1. Dated April 24, 2024. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023nn – Rincon Consultants, Inc. (TN 253034). Section 5-2 Land Use. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023k – Rincon Consultants, Inc. (TN 252932). Section 5-10 Worker Safety. Dated November 3, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023q – Rincon Consultants, Inc. (TN 252965). Appendix D Public Resources. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>
- RCI 2023t – Rincon Consultants, Inc. (TN 252971). Section 5-1 Cultural Resources and Tribal Cultural Resources. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2023u – Rincon Consultants, Inc. (TN 252972). Section 5-3 Noise. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2023y – Rincon Consultants, Inc. (TN 252976). Section 5-5 Visual Resources. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2023z – Rincon Consultants, Inc. (TN 252977). Section 5-4 Traffic and Transportation. Dated November 6, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

RCI 2023qq – Rincon Consultants, Inc. (TN 254588). Appendix M Socioeconomics Study. Dated November 7, 2023. Available online at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-02>

Section 11

Authors and Reviewers

11 Authors and Reviewers

Lead Agency—California Energy Commission

Section Authors

Jacquelyn Record and Yifan Ding (Air Quality, Climate Change and Greenhouse Gas Emissions, Public Health)

Carol Watson and Ann Crisp (Biological Resources)

Kenneth Salyphone (Efficiency and Energy Resources and Facility Reliability)

Ardalan Sofi (Noise and Vibration and Facility Design)

Kevin Delano (Geology, Paleontology, and Minerals)

James Ackerman (Water Resources and Solid Waste Management)

Sudath Edirisuriya (Transmission System Engineering, Transmission Line Safety and Nuisance)

Joseph Douglas (Compliance Conditions and Compliance Monitoring Plan)

Paul Deaver (Public Benefits, Mandatory Opt In Requirements: Net Economic Benefits)

Anmarie Medin - Pacific Legacy, Inc. (Cultural and Tribal Cultural Resources)

Alvin Greenberg, Ph.D.- Risk Sciences Associates (Worker Safety and Fire Protection)

Chuck Huffine - Mead & Hunt (Transportation)

Krista Wellnitz and Lisa Harmon- Mead & Hunt (Land Use, Socioeconomics, and Environmental Justice)

Jennifer Taia - Tatsumi and Partners (Visual Resources)

Paul Miller - The RCH Group (Alternatives, Hazards, Hazardous Materials/Waste and Wildfire)

Brian Healy and Stefan Unnasch- Life Cycle (Appendix C Report of Findings: Net Positive Economic Impacts of Darden Clean Energy Project)

Nate Berls, The RCH Group (Alternatives, Mandatory Opt In Requirements, Appendix A Cumulative Scenario)

Supervision and Management

Wenjun Qian, Air Quality Unit Supervisor

Ann Crisp, Biological Resources Unit Supervisor

Steve Kerr, Land Use and Public Services Unit Supervisor

Gabriel Roark, Cultural Resources Unit Supervisor/Assistant Tribal Liaison

Shahab Khoshmashrab, Facility Design Unit Supervisor

Brett Fooks, Safety & Reliability Branch Manager

Abdel-Karim Abulaban, Geosciences Unit Supervisor

Joseph Hughes, Engineering Branch Manager

Kaycee Chang, CEQA Project Management Unit Supervisor

Eric Knight, Siting and Environmental Branch Manager

Dian Vorters, Deputy Director - Siting, Transmission, and Environmental Protection Division

Elizabeth Huber, Director - Siting, Transmission, and Environmental Protection Division

Project Assistant

Marichka Haws

Project Management/Legal

Lisa Worrall, Project Manager

Alex Mayer, Staff Counsel

Crystal Cabrera, Staff Counsel

Anthony Cusato, Staff Counsel

Appendix A

Cumulative Scenario

Appendix A Cumulative Scenario

Preparation of the cumulative impact analysis is required under the California Environmental Quality Act (CEQA). In the CEQA Guidelines, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the Environmental Impact Report (EIR) together with other projects causing related impacts” (California Code of Regulations (CCR), tit. 14, § 15130(a)(1)). Cumulative impacts must be addressed if the incremental effect of a project, combined with the effects of other projects, is “cumulatively considerable,” and therefore potentially significant (CCR, tit. 14, § 15130(a)(2)). Such incremental effects are to be “viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects” (CCR, tit. 14, § 15164(b)(1)). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

The discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence, yet the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. (CCR, tit. 14, § 15130(a)(2)).

The cumulative impact discussion is intended to be guided by the standards of practicality and reasonableness (CCR, tit. 14, § 15130(b)). CEQA Guidelines sections applicable to a cumulative impact analysis state the following:

- CEQA Section 15355: “Cumulative impacts” refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
 - (a) The individual effects may be changes resulting from a single project or a number of separate projects.
 - (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.
- CEQA Guidelines Section 15130 (a)(1): As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.

An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

- CEQA Guidelines Section 15064(h)(4): The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

Cumulative Project Scenario

Under CEQA, there are two commonly used methodologies for establishing the cumulative impact scenario—the “list approach” and the “projections approach.” The list approach uses a “list of past, present, and probable future projects producing related or cumulative impacts” (CCR, tit. 14, § 15130(b)(1)(A)). The projections approach uses a “summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect” (CCR, tit. 14, § 15130(b)(1)(B)).

This Staff Assessment utilizes the list approach to provide an understanding and context for analyzing the potential cumulative effects related to the proposed project. The project list supplements the cumulative scenario with information on specific projects that are proposed or under construction in the surrounding communities.

Review of the Fresno County Planning Commission’s Open Applications and Planning Commission Log webpage, and the Fresno County Division of Public Works and Planning’s Photovoltaic Facilities Processing webpage provided several past, present, or probable future projects located within 15 miles of the proposed project that would potentially be constructed within one year before or after the proposed project. As the direct and indirect effects of a project are generally evaluated within a smaller radius (e.g., six miles for dispersion modeling, 10 miles for biological resource special-status species, etc.), a radius of up to 15 miles encompasses a sufficient geographic area for identifying a comprehensive list of cumulative projects to be analyzed in the cumulative scenario.

A list of these projects is shown in **Table A-1** along with (1) an identification number, (2) a brief description, (3) distance from the proposed project site, PG&E utility switchyard, and downstream network upgrades and (4) status. Although only those cumulative projects located within a 15-mile radius of any part of the proposed project site are listed, the cumulative impact analysis for each technical area included in this document considers a geographic area appropriate for each technical area, which may be less than 15 miles. A map showing the approximate location of the cumulative projects is shown in **Figure A-1**.

The analysis of cumulative effects considers several variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being

evaluated. For each resource area, this Staff Assessment evaluates the cumulative impacts as follows:

- Defines the geographic scope of cumulative impact analysis for each discipline, based on the likely geographic extent in which proposed project impacts could combine with those of other projects.
- Evaluates the effects of the proposed project in combination with past and present (existing) projects within the geographic scope defined for each discipline.
- Evaluates the effects of the proposed project with foreseeable future projects that occur within the geographic scope defined for each discipline.

In order to reflect the greatest potential for combined impacts, the cumulative analysis assumes that all projects defined in the cumulative scenario are constructed or operating during the construction and operation period of the proposed project.

This cumulative list was developed using the list method (as defined under CEQA). Staff's cumulative impact analysis considers the environmental effects associated with those projects identified in **Table A-1** in conjunction with the impacts identified for the project. **Table A-1** provides information on cumulative projects that could combine with the effects of the proposed project. Applicable cumulative projects consist of projects that are reasonably foreseeable or currently operational and would be constructed or operated during the life of the proposed project. Cumulative projects include land development or public works projects that are planned or approved and, given their physical proximity to the project area or an overlap in the transportation routes used during construction, could potentially contribute to the same environmental effects as the proposed project.

A detailed analysis of cumulative impacts on individual environmental resource areas is provided within the respective technical sections of this document.

TABLE A-1 CUMULATIVE PROJECTS WITHIN 15 MILES

Map Id Number	Project Name	Description	Location	Distance to Closest Project Component	Distance to Closest Downstream Upgrade Scenario	Status
1	FC-1: Akhavi LLC Project	GPA 560: Rezone	20866 Lassen Avenue, Five Points	3.6 miles southeast of the solar facility	12.5 miles east of Scenario 2	Under Fresno County Planning Commission Review.2
2	FC-2: Arroyo Pasajero Bridge Replacement Geotechnical	Bridge replacement	Intersection of Fresno Coalinga Road and S. El Dorado Avenue	6.3 miles south of the solar facility	3.5 miles east of Scenario 2	Under Fresno County Planning Commission Review.2
3	FC-3: Sentry Ag Services Project	CUP 3768: CUP for increase cow-heard size + building of 3 additional barns	13695 West Elkhorn Avenue, Riverdale	7.2 miles east of the solar facility	17 miles east of Scenario 2	Under Fresno County Planning Commission Review.2
4	FC-4: Kamm Avenue Pistachio	Conditional Use Permit (CUP) 3685: Pistachio processing facility with a variance request for building height more than 35 feet	On the south side of Kamm Avenue, approximately 1 mile west of State Route 33, and approximately 4 miles east of I5 in unincorporated Fresno County (Fresno County 2021a)	7.1 miles north of the utility switchyard	2.8 miles east of Scenario 1	Under Fresno County Planning Commission Review.2
5	FC-5: WTC Riverdale, LLC Project	CUP 3679 EXT 1: Dairy Digester/ Connection to Existing Pipeline for renewable natural gas	12840 West Kamm Avenue, Riverdale	8.7 miles east of the solar facility	19.8 miles east of Scenario 2	Under Fresno County Planning Commission Review.2
6	FC-6: Seneca Resources Corporation Project	CUP 3548: Oil and Gas Exploration/ Production	West of Coalinga Mendota Road	9.4 miles southwest of the solar facility	1.5 miles west of Scenario 3	Under Fresno County Planning Commission Review.2

TABLE A-1 CUMULATIVE PROJECTS WITHIN 15 MILES

Map Id Number	Project Name	Description	Location	Distance to Closest Project Component	Distance to Closest Downstream Upgrade Scenario	Status
7	FC-7: Landfill Gas Conditioning System & Pipeline	CUP 3762: Landfill Gas Conditioning System & Pipeline	18950 West American Avenue, Kerman	10.6 miles northeast of the solar facility	20.5 miles east of Scenario 1	Under Fresno County Planning Commission Review.2
8	FC-8: Gas Station and Convenience Store	CUP 3758: Gas Station and Convenience Store	25014 W Dorris Ave, Coalinga	12.2 miles south of the solar facility	1.1 miles west of Scenario 3.	Under Fresno County Planning Commission Review.2
9	FC-9: Heartland Hydrogen Project	CUP 3630/3631; Development of an electrolytic hydrogen fuel generation facility using treated wastewater and on-site generation of solar PV energy; project would be capable of producing approximately 30,000 kg/day of renewable hydrogen for zero-emission transportation fuel	State Route 33 and West American Avenue, second location at Bass Avenue in the city of Mendota	12.3 miles northwest of the solar facility	3.7 miles east of Scenario 1	Environmental Review in Progress.1
10	FC-10: Agricultural Commercial Center	CUP 3697: Agricultural Commercial Center	32899 Lassen Avenue, Huron	13.8 miles southeast of the solar facility	5.9 miles east of Scenarios 2 and 3	Under Fresno County Planning Commission Review.2
11	FC-11: Multi use/Freeway commercial development	Multi use/Freeway commercial development	25203 West Dorris Avenue, Coalinga	12.2 miles southwest of the solar facility	1.2 miles west of Scenario 3	Under Fresno County Planning Commission Review.2

TABLE A-1 CUMULATIVE PROJECTS WITHIN 15 MILES

Map Id Number	Project Name	Description	Location	Distance to Closest Project Component	Distance to Closest Downstream Upgrade Scenario	Status
12	FC-12: Scarlet Solar	400 MW PV solar facility with 400 MW energy storage system on 4,089 acres	3.5 miles west-southwest of the community of Tranquility and approximately 6.5 miles east of I-5 along State Route 33 at W South Avenue in unincorporated Fresno County	10.4 miles northwest of the solar facility	9.2 miles east of Scenario 1	Project is currently under construction ^{1, 5}
13	FC-13: Sonrisa Solar Project	CUP 3677: 200 MW PV solar facility with battery storage capacity of 100 megawatts on approximately 2,000 acres	Approximately 1.9 miles east of State Route 33 at West Adams Avenue	10.4 miles northwest of the solar facility	9.3 miles east of Scenario 1	Under Fresno County Planning Commission Review ¹
14	FC-14: Tranquility Solar Project	CUP 3451-58: 200 MW solar facility on 3,732 acres	Intersection of West Floral Avenue and State Route 33	10.1 miles north of the utility switchyard	3.6 miles east of Scenario 1	Under construction, not completed ²
15	FC-15: Luna Valley Solar	CUP 3671: 200 MW solar facility and energy storage on 1,252 acres	0.90-mile northwest of the intersection of Manning Avenue and South Derrick Avenue	12.7 miles north of the utility switchyard	7.5 miles east of Scenario 1	Approved; Construction permits not yet obtained ^{2, 3}
16	FC-16: H2B2 USA, LLC, Project	CUP 3738: Solar and battery storage facility on 60 acres	24387 West Whitesbridge Avenue, Kerman	14.4 miles north of the solar facility	18 miles east of Scenario 1	Under Fresno County Planning Commission Review ¹
17	FC-18: Five Points Pipeline, LLC, Project	CUP 3735: Construction of a dairy gas digester facility and pipeline	0.95-mile southeast of South Madera Avenue and West Elkhorn Avenue	6.5 miles east of the solar facility	16 miles east of Scenario 2	Under Fresno County Planning Commission Review ²

TABLE A-1 CUMULATIVE PROJECTS WITHIN 15 MILES

Map Id Number	Project Name	Description	Location	Distance to Closest Project Component	Distance to Closest Downstream Upgrade Scenario	Status
18	FC-20: Agricultural Operations Facility Project	CUP 3756: Construction of three agricultural operations buildings totaling approximately 7.3 acres	2725 South Sycamore Avenue, Kerman	14.3 miles northeast of the solar facility	26.5 miles east of Scenario 1	Under Fresno County Planning Commission Review ²
19	FC-21: Plug Project Holdings Co. Project	VA 4122: Variance Application	0.40-mile northwest of the intersection of State Route 33 and West Adams Avenue	12.4 miles northwest of the solar facility	8 miles east of Scenario 1	Under Fresno County Planning Commission Review ²
20	FC-23: Microwave Tower Project	DRA 4739: Microwave Tower	Adjacent to Janetski Field along West Morton Avenue	8.5 miles north of the solar facility	14.8 miles east of Scenario 1	Under Fresno County Planning Commission Review ²
21	FC-24: Tranquility Wastewater Treatment Plant Improvement Project	This planning project will assess the condition of the sewer collection system pipelines, correct existing deficiencies, and prioritize the replacement of sewer lines based on their estimated remaining useful life.	0.30-mile south of the intersection of South Levee Road and South Sonoma Avenue	9 miles north of the solar facility	16 miles east of Scenario 1	Under Fresno County Planning Commission Review ²
22	WWD-1: Westlands Solar Park (WSP)	A series of utility-scale solar photovoltaic (PV) energy generating facilities on about 21,000 acres which would produce 2,000 MW through the	West-central Kings County, generally located south of SR- 198, west of SR-41 and the Kings River, and east of the Fresno County Line	22.8 miles southeast of the solar facility	11.1 miles east of Scenarios 2 and 3	Environmental review completed. Individual solar operations as part of this project are in

TABLE A-1 CUMULATIVE PROJECTS WITHIN 15 MILES

Map Id Number	Project Name	Description	Location	Distance to Closest Project Component	Distance to Closest Downstream Upgrade Scenario	Status
		implementation of individual solar projects in 12 subareas which are all adjacent to each other.				various stages. Some are operational with others expected to come online in 2023-2024. ^{4,6}
23 (Reserved)						
24	FC-25: BayWa.r.e/Cornucopia Hybrid Solar Project	CUP 3777: Hybrid solar and battery energy storage on about 1,600 acres.	The intersection of SR 33 (Lost Hills Road) and Sutter Avenue	28 miles south of the utility switchyard	7.6 miles southwest of Scenarios 2 and 3	Under Fresno County Planning Commission Review ¹
25	FC-26: Manning 500/230 kV Substation Project	Construction of the 500/230 kV Manning substation and approximately ten miles of new 230 kV overhead transmission lines from the new Manning substation to PG&E's Tranquility substation.	Approximately 1.1 miles west and 0.25 mile south of the intersection of Interstate 5 and Manning Avenue	16.5 miles north of utility switchyard	0.5 miles north of Scenario 1	Under California Public Utilities Commission Review ⁷
26	FC-27: CES Electron Farm One	CUP 3742: A 6.4 MW solar facility and associated equipment on 40 acres.	West side of S Fairfax Ave, 0.4 miles east of Interstate-5.	23 miles northwest of the solar facility	4.5 miles northwest of Scenario 1	Environmental review completed. Under construction ¹
27	FC 28: San Luis West Solar Project	CUP 3781: 770 acres of solar panels and associated infrastructure, including the project	3 miles south of Huron, California, south of West Tractor Avenue, and east of Interstate 5	22.6 miles south of the solar facility	0.6 miles east of Scenarios 2 and 3	Environmental Review in Progress ²

TABLE A-1 CUMULATIVE PROJECTS WITHIN 15 MILES

Map Id Number	Project Name	Description	Location	Distance to Closest Project Component	Distance to Closest Downstream Upgrade Scenario	Status
		substation, BESS, operations and maintenance building				
28	FC 30: Key Energy Storage	CUP 3734: Up to 3 gigawatts of lithium-ion battery energy storage or a combination of lithium-ion and iron-flow storage technology. The Project would not generate electricity.	Adjacent to the Gates Substation	13.7 miles northwest of the utility switchyard	Adjacent to Scenarios 2 and 3 which terminate at the Gates Substation	Environmental Review in Progress ¹

Sources: 1 Fresno 2023a; 2 Fresno 2023b; 3 Fresno 2023c; 4 Golden State Clean Energy 2023;5 WWD 2023; 6 WWD 2017 7 CPUC 2024
Notes: CUP – conditional use permit; DRA – Director Review and Approval; FC – Fresno County; GPA – General Plan Amendment; MW – megawatts; VA – Variance Application; WWD – Westlands Water District

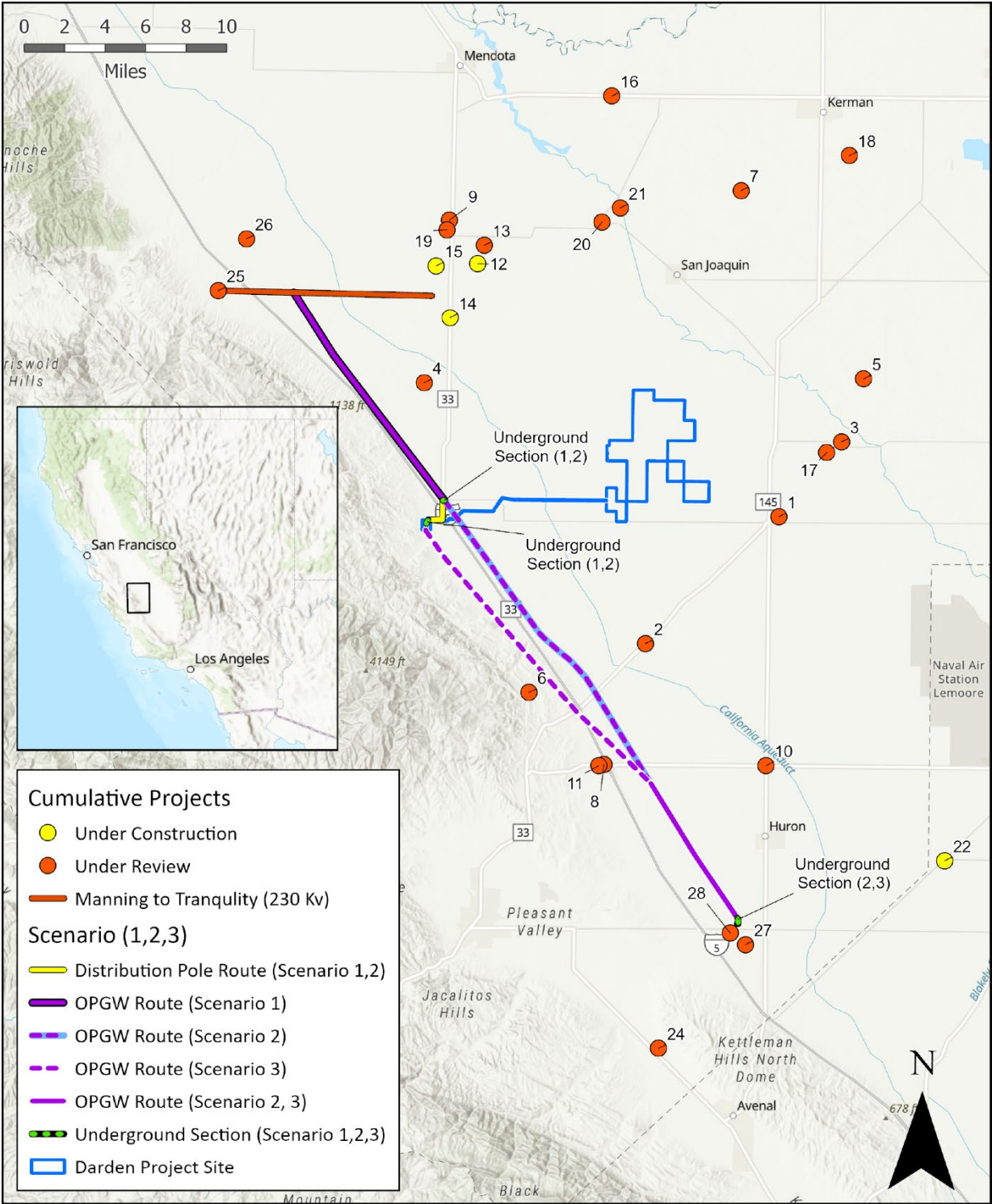


Figure A-1
Darden Cumulative Projects

Sources: Fresno 2023a; Fresno 2023b; Fresno 2023c; Golden State
Clean Energy 2023; WWD 2023; WWD 2017, CPUC 2024

References

- CEC 2023 – California Energy Commission. CEC 2023 Land-Use Screens for Electric System Planning. Accessed in May 2024. Available online at: <https://www.energy.ca.gov/data-reports/california-energy-planning-library/land-use-screens/cec-2023-land-use-screens-electric>
- CPUC 2024 – California Public Utilities Commission. LSPCG Manning 500/230 kV Substation Project info. Accessed in January 2025. Available online at: <https://ia.cpuc.ca.gov/environment/info/ascent/Manning/>
- Fresno 2023a – Fresno County. Photovoltaic Facilities Processing. Accessed in January 2024. Available online at: <https://www.fresnocountyca.gov/files/sharedassets/county/v/5/public-works-and-planning/development-services/planning-and-land-use/photovoltaic-solar-facilities/pv-solar-projects-in-process-24-06-12.pdf>.
- Fresno 2023b – Fresno County. Open Applications. Accessed in January 2024. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/planning-commission/open-applications>
- Fresno 2023c – Fresno County. Planning Commission Log. Accessed in January 2024. Available online at: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/planning-commission/planning-commission-log>.
- Golden State Clean Energy 2024 – Valley Clean Infrastructure Plan (VCIP). Accessed in January 2024. Available online at: <https://goldenstatecleanenergy.com/project/valley-clean-infrastructure/>
- WWD 2017 – Westlands Water District (WWD). Final Program Environmental Impact Report Westland Solar Park Master Plan and WSP Gen-Tie Corridors Plan. Accessed in January 2024. Available online at: <https://wwd.ca.gov/wp-content/uploads/2017/12/westlands-solar-park.pdf>
- WWD 2023 – Westlands Water District (WWD). Farming the Sun Solar Power in Westlands. Accessed in January 2024. Available online at: <https://wwd.ca.gov/wp-content/uploads/2023/06/farming-the-sun.pdf>

Appendix B

Mailing List

Appendix B: Mailing List

The following is the mailing list for the Darden Clean Energy Project.

The following is a list of the State agencies that received State Clearinghouse notices and documents:

- California Air Resources Board (ARB)
- California Department of Fish and Wildlife, Central Region 4 (CDFW)
- California Department of Transportation, District 6 (DOT)
- California Emergency Management Agency
- California Energy Commission
- California Native American Heritage Commission (NAHC)
- California Natural Resources Agency
- California Public Utilities Commission (CPUC)
- California Regional Water Quality Control Board, Region 5 (RWQCB)
- Department of Toxic Substances Control
- Office of Historic Preservation
- State Water Resources Control Board, Division of Water Quality

Table B-1 presents the list of occupants and property owners contiguous to the project site and a list of property owners within 1,000 feet of the project site and 500 feet of project linears.

Table B-2 presents the list of agencies, including responsible and trustee agencies and the public library.

Table B-3 presents the list of interested parties.

TABLE B-1 OWNERS AND OCCUPANTS OF PROPERTY CONTIGUOUS TO PROJECT SITE OWNERS WITHIN 1,000 FEET OF PROJECT SITE AND 500 FEET OF PROJECT LINEARS

Name	Address	City	State	Zip
AVILA JAMES G & ISABEL ANN (TRUSTEES)	PO BOX 609	LEMOORE	CA	93245
BHULLAR ESTATES INC	2916 ALLENWOOD CT	SAN JOSE	CA	95148
BRITZ DAVID & MARILYN (TRUSTEES)	PO BOX 9050	FRESNO	CA	93790
BRITZ GIN PARTNERSHIP II	3265 W FIGARDEN DR	FRESNO	CA	93711
C & A FARMS LLC	5260 N PALM AVE # 421 STOP M	FRESNO	CA	93704
MARICOPA ORCHARDS LLC	5260 N PALM AVE # 421 STOP M	FRESNO	CA	93704
OCCUPANT	25720 MT WHITNEY AVE	FIVE POINTS	CA	93624
CITY NATIONAL BANK NA (TRUSTEE)	15 CORPORATE PLAZA DR	NEWPORT BEACH	CA	92660
OCCUPANT	31485 W HARLAN	CANTUA CREEK	CA	93608
OCCUPANT	17056 S SONOMA AVE	CANTUA CREEK	CA	93608
CLARK BROS FARMING	4955 E ANDERSEN AVE	FRESNO	CA	93727
OCCUPANT	17812 S SONOMA AVE	CANTUA CREEK	CA	93608
OCCUPANT	17830 S SONOMA AVE	CANTUA CREEK	CA	93608
COBB CHARLES PETER	6083 N FIGARDEN DR	FRESNO	CA	93722
DOUBLE J FARMS	PO BOX 398	CORCORAN	CA	93212
FORTUNE FARMS NO 2 & 6	PO BOX 370	CANTUA CREEK	CA	93608
G & M FARMS LLC	19388 EXCELSIOR AVE	RIVERDALE	CA	93656
GIFFEN PRICE & ASSOC	4142 ROAD 16	MADERA	CA	93637
OCCUPANT	28940 W MOUNT WHITNEY AVE # 10	CANTUA CREEK	CA	93608
GONYE FAMILY FARMS LLC	10735 N FRAYNE DR	VERO BEACH	FL	32963
GROULEFF ERIC A TRS	627 MEADOW LN	KERMAN	CA	93630
GUTIERREZ INEZ	6264 N VAN NESS BLVD	FRESNO	CA	93711
OCCUPANT	23936 W CERINI	FIVE POINTS	CA	93624
OCCUPANT	28940 W MOUNT WHITNEY AVE # 9	CANTUA CREEK	CA	93608
HNS PROPERTIES LLC	PO BOX 673	SALINAS	CA	93902
HOLLAND FARMS LP	PO BOX 80	KERMAN	CA	93630
OCCUPANT	20850 S DERRICK	CANTUA CREEK	CA	93608
HOPPE FARMING LLC	680 W SHAW AVE	FRESNO	CA	93704

TABLE B-1 OWNERS AND OCCUPANTS OF PROPERTY CONTIGUOUS TO PROJECT SITE OWNERS WITHIN 1,000 FEET OF PROJECT SITE AND 500 FEET OF PROJECT LINEARS

Name	Address	City	State	Zip
HOSS PISTACHIOS LLC	1324 W CRAIG RD	NORTH LAS VEGAS	NV	89032
RONALD NUNN FAMILY LIMITED PARTNERSHIP	10500 BRENTWOOD BLVD	BRENTWOOD	CA	94513
HUGHES GARY A (TRUSTEE)	11218 N KNOTTING HILL DR	FRESNO	CA	93730
JAY FRANCES A	518 E 19TH ST	OAKLAND	CA	94606
KLEIN KEVIN (TRUSTEE)	2363 S CEDAR AVE	FRESNO	CA	93725
OCCUPANT	24841 W CLARKSON AVE	CANTUA CREEK	CA	93608
MARTIN PHILIP A T	19518 FLINT AVE	LEMOORE	CA	93245
MOUREN RITA K TRS	35244 OIL CITY RD	COALINGA	CA	93210
NUNN FAMILY NO 2 LIMITED PARTNERSHIP	741 SUNSET RD	BRENTWOOD	CA	94513
PARNAGIAN SUE	3899 W ALLUVIAL AVE	FRESNO	CA	93711
RENTON SARAH JOY	16400 E PELTIER RD	ACAMPO	CA	95220
RENTON SARAH JOY	420 N ALMANSOR ST	ALHAMBRA	CA	91801
OCCUPANT	28940 W MOUNT WHITNEY AVE	CANTUA CREEK	CA	93608
OCCUPANT	18117 S SONOMA AVE	CANTUA CREEK	CA	93608
RUSTY ROSE LLC	9422 N SUNNYSIDE AVE	CLOVIS	CA	93619
SANDHU BINDER S & SUKHDEV K	5323 W HUFFMAN AVE	FRESNO	CA	93722
SCHMIEDERER FAMILY FARMS LLC	2578 S LYON AVE	MENDOTA	CA	93640
SEASHOLTZ GEORGE J	4965 N CRYSTAL AVE	FRESNO	CA	93705
STEPHENS ROBERT N (TRUSTEE)	2625 TROUT GULCH RD	APTOS	CA	95003
SUPERIOR ALMOND HULLING L P	PO BOX 399	CANTUA CREEK	CA	93608
TAYLOR ERNEST A & ARLENE L	PO BOX 540	HANFORD	CA	93232
OCCUPANT	24465 W CERINI	FIVE POINTS	CA	93624
THANDI NAVREEN KAUR TRS	10795 ROAD 26	MADERA	CA	93637
WALKER FIVE POINTS LLC	470 E HERNDON AVE	FRESNO	CA	93720
WOOD LEONARD D JR & ANTOINETTE TRS	30043 CREEK RUN	BUENA VISTA	CO	81211
WESTLANDS WATER DISTRICT	286 W CROMWELL AVE	FRESNO	CA	93711

TABLE B-2 AGENCIES

Name	Title	Agency	Address	City	State	Zip
TED PIEARCY	CUPA SUPERVISOR EHS	FRESNO COUNTY ENVIRONMENTAL HEALTH, HAZARDOUS MATERIALS COMPLIANCE PROGRAM	1221 FULTON MALL	FRESNO	CA	93721
DAVID LUCHINI	DIRECTOR	FRESNO COUNTY DEPARTMENT OF PUBLIC HEALTH	1221 FULTON STREET	FRESNO	CA	93721
DANIEL J. LYNCH	DIRECTOR	CENTRAL CALIFORNIA EMS AGENCY	1221 FULTON ST., 5TH FLOOR	FRESNO	CA	93775-1867
DALE DOTSON	OPERATIONS COORDINATOR	CENTRAL CALIFORNIA EMS AGENCY	1221 FULTON ST., 5TH FLOOR	FRESNO	CA	93775-1867
RYAN MICHAELS	ASSISTANT CHIEF	FRESNO COUNTY FIRE PROTECTION DISTRICT	210 S. ACADAMY AVE	SANGER	CA	93657
BRANDON PURSELL	LIEUTENANT	FRESNO COUNTY SHERIFF	2200 FRESNO STREET	FRESNO	CA	93721
DAVID RANDALL	SENIOR PLANNER	COUNTY OF FRESNO DEPARTMENT OF PUBLIC WORKS AND PLANNING	2220 TULARE STREET, 6TH FLOOR	FRESNO	CA	93721
JEREMY SHAW	PLANNER	COUNTY OF FRESNO DEPARTMENT OF PUBLIC WORKS AND PLANNING	2220 TULARE STREET, 6TH FLOOR	FRESNO	CA	93721
		COUNTY OF FRESNO DEPARTMENT OF PUBLIC WORKS AND PLANNING, WATER AND NATURAL RESOURCES DIVISION	2220 TULARE STREET, 6TH FLOOR	FRESNO	CA	93721
RUSS FREEMAN	DEPUTY GENERAL MANAGER – RESOURCES	WESTLANDS WATER DISTRICT (WWD)	3130 N FRESNO ST	FRENZO	CA	93703
		FRESNO COUNTY OFFICE OF EMERGENCY SERVICES	P.O. BOX 11867	FRESNO	CA	93775-1867
MATTHIAS BIER-STANBERRY	COUNTY-WIDE SAFETY OFFICER	FRESNO COUNTY ENVIRONMENTAL HEALTH – HAZARDOUS MATERIALS COMPLIANCE PROGRAM	1221 FULTON STREET	FRESNO	CA	93721
JOSH CHRISMAN	ADMINISTRATIVE OFFICER	FRESNO COUNTY FIRE PROTECTION DISTRICT	2010 SOUTH ACADEMY AVE.	SANGER	CA	93657
DUSTIN HAIL	FIRE CHIEF	FRESNO COUNTY FIRE PROTECTION DISTRICT	2010 SOUTH ACADEMY AVE.	SANGER	CA	93657
ERROL VILLEGAS	MANAGER, PERMIT DEPARTMENT	SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, CENTRAL REGION	1990 E GETTYSBURG AVENUE	FRESNO	CA	93726

TABLE B-2 AGENCIES

Name	Title	Agency	Address	City	State	Zip
		FRESNO COUNTY PUBLIC LIBRARY - SAN JOAQUIN BRANCH	8781 S MAIN ST	SAN JOAQUIN	CA	93660

TABLE B-3 INTERESTED PARTIES

First Name	Last Name	Organization	Address	City	State	Zip
NONE	NONE	NONE	NONE	NONE	NONE	NONE

Appendix C

Report of Findings: Net Positive Economic
Impacts of Darden Clean Energy Project

Report of Findings: Net Positive Economic Benefits of Darden Clean Energy Project

Prepared by Brian D. Healy and Stefan Unnasch, Life Cycle Associates, LLC

Date: February 10, 2025

Executive Summary

The proposed Darden Clean Energy Project is located in Fresno County, California. The project, as updated on October 1, 2024, contains a 1,150 MW solar facility, a 1,150 MW battery electric storage system (BESS), step-up substation, and gen-tie line¹.

To meet the requirements of Public Resources Code Section 25545.9, a Renewable Energy Model (RE Model) was developed to estimate the economic benefits to the county for the Darden Clean Energy Project and the undeveloped scenario. The model applies input data from the project developer submission and compares the impact of the project development to the undeveloped site to estimate local impacts. Results from the RE Model, as shown in **Figure 1**, demonstrate that the Darden Clean Energy project meets the net positive economic benefit requirements of the Code, where the developed scenario exceeds the economic benefits of the undeveloped scenario.

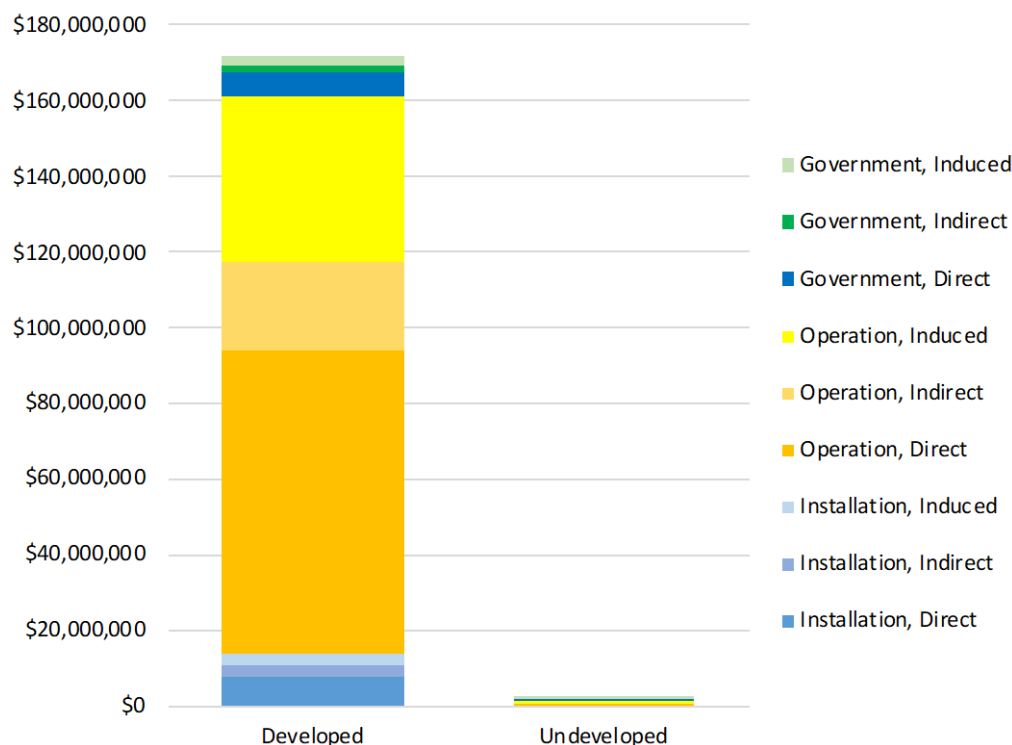


Figure 1. Economic Benefits of Darden Clean Energy Project (Developed) vs. Undeveloped Site.

1 <https://www.energy.ca.gov/powerplant/solar-photovoltaic-pv/darden-clean-energy-project>

The economic benefits of the developed project scenario are \$171.7 million compared to the undeveloped economic benefits of \$2.4 million. Based on these outputs from the RE Model, the Darden Clean Energy Project generates \$169.3 million of net positive economic benefits, developed value less undeveloped value, to Fresno County over its lifetime on a net present value basis.

Methodology for Net Economic Benefits

The complete methodology for estimating the net economic benefits can be found in the Appendix of this report. The estimation of net economic impact of the Darden Clean Energy Project (DCEP) in Fresno County is based upon input factors that are included in a general input/output model called the RE Model. The input factors include costs associated with the various technology components of the project, the local share allocated for each component, system performance, operations, as well as modeled revenues and costs of the system. The outputs of the RE Model, based on these assumptions, are then compared to the outputs from the model of the site remaining undeveloped to estimate the net economic benefit of the project to Fresno County.

Model Inputs

To estimate the local net economic benefit of the DCEP project, the following modeling input assumptions are presented in **Table 1**, which are inputs to the RE Model.

Table 1. Energy Technology Input Assumptions for Darden Clean Energy Project

Technologies	PV Solar & BESS
PV Solar	\$1,558,625,500
BESS	\$835,010,600
Step-up Substation	\$79,372,800
Gen-tie	\$61,650,000
Utility Switchyard	\$111,000,000
Hardware Purchase	\$669,439,440
Interconnect & Installation	\$117,150,000
Total Installed Cost	\$786,589,440
O&M, Y1	\$2,900,000
O&M escalation	2.5%
Discount Factor	5%
BESS Installed Capacity, MW	1,150
Solar Installed Capacity, MW	1,150
Round-trip efficiency	93.7%
Y1 Available Capacity, MW BESS	1,078
Capacity Factor, BESS	17%
Capacity Factor, Solar	28.4%
Annual Hours	8,760

- Technologies – Photovoltaic (PV) solar & Tesla Megapack 2 XL battery energy storage system (BESS)
- PV Solar – 1,150MW installed capacity, 34% purchased locally
- BESS – 1,150MW installed capacity, 13% purchased locally
- Step-up Substation – 34.5-500 kilovolt (kV), 39% purchased locally
- Gen-tie – 10–15-mile 500kV generation intertie, 100% purchased locally
- Utility Switchyard – 500kV station, 50% purchased locally
- Hardware Purchase – local share component of total value for PV Solar, BESS, and Step-up Substation
- Interconnect & Installation – local share component of total value for Gen-tie and Utility Switchyard
- Total Installed Cost – total of hardware purchase and interconnect & installation
- O&M - operations and maintenance costs to ensure peak system efficiency
- O&M escalation² – literature value for utility-scale BESS
- Discount Factor³ – conservative factor of literature models
- Round-trip efficiency⁴ – BESS maximum available storage capacity
- Y1 Available Capacity – product of total BESS capacity and round-trip efficiency
- Capacity Factor, BESS⁵ – single, 4-hour cycle per day (24 hours)
- Capacity Factor, Solar⁶ – plant's electricity generation as a percentage of its summer capacity value for plants with a full-year of operation
- Annual hours – 24 hours per day for 365 days

The model assumptions are the input factors for the RE Model. These inputs are used to estimate the revenues, taxes and fees, as well as costs associated with the installation of the DCEP facility in Fresno County. The localized value of these inputs is distributed across various sectors of the local economy through economic multipliers.

Revenue

The estimated revenue streams for the BESS facility are shown in Table 2. The revenue streams assume an internal transfer of energy from solar production to the BESS facility and therefore no external power purchase. The energy stored in the BESS system is sold back to the grid at peak prices that maximize facility income, estimated at \$110/MWh. Net income for the BESS facility is estimated at \$173 million.

2 <https://www.nrel.gov/docs/fy21osti/79236.pdf>

3 <https://www.nrel.gov/docs/fy20osti/74840.pdf>

4 https://portal.ct.gov/-/media/csc/3_petitions-medialibrary/petitions_medialibrary/mediapetitionnos1601-1700/pe1607/petitionersubmissions/supplement-attachment-a---megapack_2_xl_datasheet.pdf

5 *ibid*

6 <https://www.eia.gov/todayinenergy/detail.php?id=39832#:~:text=Utah's%200.9%20GW%20of%20solar,average%20capacity%20factor%20of%2028.4%25.>

Table 2. Revenue for BESS Facility

	MWh	\$/MWh	Total
Power Purchase	0	\$50	\$0
Power Sales	1,573,223	\$110	\$173,054,530
Net Revenue			\$173,054,530

The estimated revenue streams for the PV Solar facility are shown in **Table 3**. The revenue streams assume an internal transfer of energy from solar production to the BESS facility. Following the charge up of the BESS, the remainder of power generated is sold back to the grid at the depressed, peak production price. Due to the time of day of production, the grid power sales price is lower than the BESS price and estimated at \$50/MWh. Net income for the PV Solar facility, excluding internal transfer, is estimated at \$59 million.

Table 3. Revenue for PV Solar Facility

	MWh	\$/MWh	Total
Grid Power Sales	1,182,016	\$50	\$59,100,800
Net Revenue			\$59,100,800

The combined annual revenue for the facility is \$232 million, where a 10 percent profit is assumed for operation. The sales tax for the region is based upon several local bond and tax measures as outlined in the project submission. The combined rate for these local values is 1.975%, thereby generating \$458K in annual sales tax revenue for the county.

Multipliers

Economic multipliers are used to estimate the impact of a change in economic activity, such as an increase in spending or investment, on the overall economy. The model results are a product of the local economic allocation and the economic multipliers shown in the Appendix. The multipliers quantify how initial spending in one sector generates additional economic activity in other sectors, often leading to a larger overall effect on the economy. Multipliers are used to estimate how local infrastructure investments stimulate demand across other sectors of the local economy.

To measure the local impact, taxation and other fees are calculated for each project type at the local level, based on the project cost, location, and other input parameters. The RE Model is configured to examine a range of technologies, power production capacities, land types, and ownership structures. The local economic activity is estimated based on the portion of equipment and installation purchase allocated for each technology.

Economic Results

To estimate the impacts of the project to the local community, a local share allocation is applied to each of the sectors identified in the following sections. The local share allocations are the estimated value that is accrued locally for the project based on project submission data, local tax rates and ongoing maintenance of the facility.

Developed Scenario

Table 4 includes the allocations for various sectors under the developed scenario, where the DCEP is built. The final column, local impact, includes the values that are subject to the multipliers for direct, indirect and induced impact to estimate the overall economic impact of the facility on the local economy.

Table 4. Local, Total impact of BESS facility based on Local Share of Total Economic Impact

Sector	Value	Local Share ^a	Local Impact
Plant Investment Hardware	\$669,439,440	1.00% ^b	\$6,694,394
Plant Installation	\$117,150,000	1.00% ^b	\$1,171,500
Maintenance, Y1	\$2,900,000	100% ^c	\$69,396,884
Plant Earnings, Y1	\$23,215,533	1.975% ^d	\$10,972,049
Property Tax, Local	\$260,000	100% ^e	\$6,221,790
Total	\$812,964,973		\$94,456,617

a The local share allocation is the estimate for local impact based on economic assumptions related to shares of tax rates and regional allocations. The value is not derived directly from economic multipliers and represents positive economic benefits accrued to the region that are not accrued in the undeveloped scenario.

b Local share based on estimated accrued local impact of facility hardware and plant installation

c Ongoing O&M occurs and accrues 100% locally

d Localized rate based on special tax assessments

e Complete total local share allocation of property tax

The plant investment hardware value for the DCEP is \$669 million, corresponding to the construction phase of the project. This is the local share of the PV Solar and BESS facilities and subject to a local share allocation of 1%, yielding a one-time local impact of \$6.7 million. The local impact of plant installation takes a similar approach based on the local share of the gen-tie and utility switchyard costs for \$1.2 million.

Maintenance is ongoing over the 35-year lifetime of the project. The initial O&M value is for the first year of operations subject to 100% local share, with a multiplier based on net present value as detailed in the Appendix. The lifetime local impact for maintenance is \$69 million. Plant earnings are a major contributor to the local economy, subject to the regional sales tax rate of 1.975%. As with maintenance, the total local impact is measured over the lifetime of the project and estimated to add \$110 million in local economic value.

The local property tax value for the facility is based on submissions from the project developer. The value was localized by applying the 1% property tax assessment and

considered over the lifetime of the facility. The local property tax value is estimated at \$6.2 million.

Undeveloped Scenario

For the undeveloped scenario, **Table 5** applies the same approach as the developed scenario to derive the output impacts for the local economy.

Table 5. Economic output impact of undeveloped site across sectors

Sector	Value	Local Share	Local Impact
Property Tax	\$26,000	100% ^a	\$622,179
Maintenance	\$29,000	100% ^b	\$693,969
Total	\$55,000		\$1,316,148

a Local share based on estimated accrued local impact of facility hardware and plant installation

b Ongoing O&M occurs and accrues 100% locally

In the undeveloped scenario, the property tax assumptions are estimated at a tenth of value of the developed scenario. This assumption considers the substantial value that the project components and revenue streams from the project have on increasing the value of the property. The other sector evaluated in the undeveloped scenario is maintenance. Maintenance, or O&M, is a local component over the lifetime of the developed scenario. For the undeveloped scenario, a conservative estimate for maintenance cost is one percent of the developed scenario.

Agricultural production on the site, as described following CEC data requests, is estimated at \$1.0 million across direct, indirect, and induced benefits. This value is not explicitly included in the RE Model but its value as compared to the developed project site, does not impact the results of the project demonstrating overall net economic benefits.

Economic Results

Applying the economic multipliers, as detailed in the Appendix, to the local impact across the different sectors of the developed and undeveloped scenarios, yields the economic benefit each scenario. **Figure 2** includes these results where the developed scenario generates \$171.7 million in economic benefits while the undeveloped scenario generates \$2.4 million.

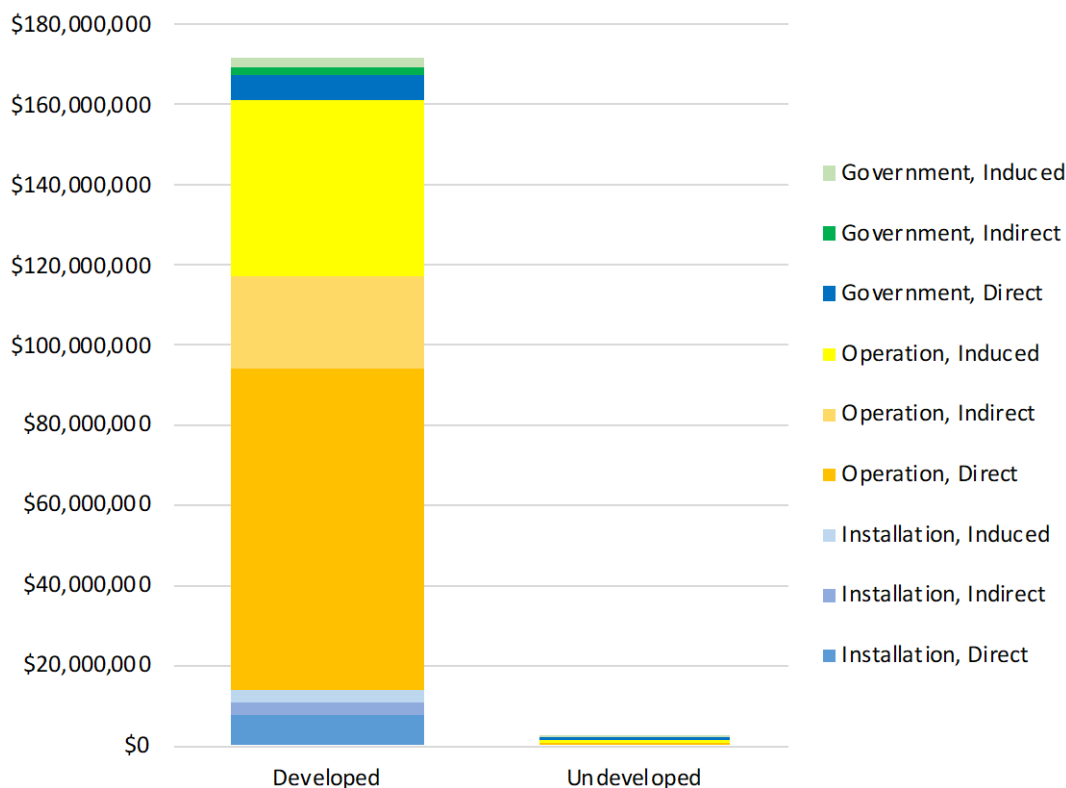


Figure 2. Economic Benefits of Darden Clean Energy Project (Developed) vs. Undeveloped Site.

Net Economic Benefits

The economic benefit of the developed project is \$171.7 million compared to the undeveloped project economic benefit of \$2.4 million. Based on the output of the RE Model, the Darden Clean Energy Project generates \$169.3 million of positive net economic value to Fresno County over its lifetime on a net present value basis.

In an alternative scenario, where plant earnings are excluded from the analysis, the developed scenario continues to meet the net economic benefit requirement. When plant earnings are set to zero in the RE Model, the net economic benefit of the project is \$153 million. Providing this comparison further supports the analysis from the data provided by the project developer, that this project creates a net positive economic benefit to Fresno County.

Conclusion

The RE Model was developed to demonstrate the net positive economic value of the Darden Clean Energy Project to Fresno County. The results support the application of the project in meeting the requirements of Public Resources Code section 25545.9, which requires that a net overall positive economic benefit be demonstrated for new infrastructure projects.

The methodology for the RE Model used to evaluate the net economic benefits of the Solar PV and BESS facility consists of three main steps. First, the inputs required to develop the BESS facility are identified in the input table. Revenues and costs were defined and evaluated as they impact the overall tax contribution of the facility to the region. These input factors were incorporated in the RE Model, an economic input/output model, to estimate net economic impact by applying economic multipliers at the local benefit level.

The results of the RE Model show that there is a net positive economic value to for this project to Fresno County. The expected direct, indirect and induced economic impacts from the project compared to the site being undeveloped across different sectors that include installation, operation and government, which includes taxes. The net positive economic benefit of the project is shown to be $\$171.7\text{M} - \$2.4\text{M} = \$169.3\text{M}$.

Appendix: Overview of Economic Approach

The following section outlines the approach for the development of the Renewable Energy Model (RE Model) to estimate net positive economic benefits of a renewable energy infrastructure project. The RE Model was developed to meet the requirements of California Code of Regulations (CCR), title 20, section 1877(f), which requires Opt-In Applications to identify preliminary information demonstrating overall net positive economic benefit to the local government that would have had permitting authority over the site and related facility, consistent with Public Resources Code section 25545.9. CCR, title 20, section 1879 (a) (7) further states that the net positive benefits identified in an Opt-In Application may include, but are not limited to, the following: (a) employment growth, (b) housing development, (c) infrastructure and environmental improvements, (d) assistance to public schools and education, (e) assistance to public safety agencies and departments, and (f) property taxes and sales and use tax revenues.

Methodology for Net Economic Benefits

The RE Model is an input/output economic model developed to estimate the direct, indirect and induced economic benefits to the local community for both the proposed project and the project site remaining undeveloped. The net economic benefit of each project is estimated against the project site remaining undeveloped, which typically results in a change in property tax and sales or use taxes for the land area, meeting the requirements under Public Resources Code section 25545.9. For some renewable energy projects, the current site use is undeveloped land. The same approach is taken when a project site is developed, in which case sales tax revenues and other factors are estimated in the model and compared against the economic benefits of the project. When the value is positive, the project demonstrates that it creates net positive economic benefits to the local community, meeting the requirements under Public Resources Code section 25545.9.

Data

The data for the RE Model is aggregated from the project developer application, publicly available data sources like tax assessor offices, and from assumptions derived from a thorough literature review. Many applicant submissions include a high and a low scenario, where a conservation factor is included in the results to reflect a range of outcomes under various economic conditions. In the RE Model, a conservation factor is included with certain assumptions to ensure that the modeling approach does not overestimate impacts within any particular sector.

Local In State vs. Out of State Factors

The purpose of the RE Model is to demonstrate the local, in state, net economic benefit of the project to the community. Within the model, this distinction is made by using local tax values from the assessor's office, local share allocations based on values from

the project application, and may be subject to a conservation factor to ensure that the local benefit is not overestimated.

Undeveloped Site

For each unique project, the land that is being developed has the potential to be used for different purposes. These other uses can be wide ranging and depend upon how the land is zoned. Given the extent of these possibilities, and that various projects have been proposed and denied on the land, despite being within the zoning requirements, this model uses the current use of the land area as the undeveloped site. By using the current application, the RE Model compares local economic benefits of the land area to derive the estimation of the net economic benefits to the local community.

Approach

As with other input/output models, like IMPLAN⁷, the RE Model provides the basis to evaluate the net economic benefits of the project for the local community over the life of the project. The model first identifies key input factors from various data sources. These input factors are used to calculate revenue, taxes and fees, and costs of the renewable energy project, which are then input into the RE Model.

Input Factors

The following list is the various input factors used in the RE Model that is based on the technology of the project. Some of the input values may have multiple entries in the case where multiple technologies are present on a particular project site.

- **Technology** - the type of renewable energy system from the project application
- **Hardware Purchase** - system cost provided by applicant, local share may be provided by applicant
- **Interconnect & Installation** - connection fee provided by applicant, local share may be provided by applicant
- **Total Installed Cost** – sum of local share allocation for hardware purchase and interconnect & installation
- **O&M** - operation and maintenance costs are fixed costs with an annual escalation factor over 35 years
- **O&M Escalation** – escalation cost is cited from the literature review
- **Discount Factor** – net present value of O&M over the 35-year lifetime of the system. The factor rate over the lifetime is 23.93: (Y1 O&M/35-year NPV)
- **Installed Capacity** – from applicant
- **Round-trip Efficiency** – from applicant
- **Y1 Available BESS Capacity** – capacity*round-trip efficiency

7 <https://support.implan.com/hc/en-us/articles/360038285254-How-IMPLAN-Works>

- **Capacity factor** – applicant, one cycle per 24 hours = (4/24)
- **Degradation Factor** – applied in year two and onward, subject to mid-lifecycle system upgrades
- **Permit Fees** – applicant, may be zero
- **Property Tax, Y1** – installation and local share of tax benefit
- **System Federal Tax Credit** – applicant, may already be factored into hardware purchase assumptions

Revenue

Revenue of the renewable energy project is subject to the installed and available capacity of the infrastructure, energy rates, capacity factor, and annual hours. In the case of battery energy storage systems (BESS), the system is optimized to purchase energy at the lowest daily rates, which align with peak energy production, and dispense the stored electricity during peak demand, when rates are highest. For integrated systems that include solar energy production and BESS, the approach is similar in that the BESS is optimized to uptake electricity at peak production and any excess energy producing capacity will be offloaded and sold to the grid.

The difference between the power purchase and power sales result in net income for the renewable energy facility. A distinction among projects is the location of the point of sale. Some producers may use the local address of the facility, as can be done with capital purchases, to accrue the benefit to the local community. In this case, the local tax rate, which is sourced from the county assessor's office, is applied to the annual net income to determine the local share income tax revenue. The local share income tax revenue is then input into the RE Model.

Other Taxes and Fees

Taxes from a renewable energy project, aside from the previously mentioned revenue tax, include the plant investment tax. The plant investment tax is a static value from the construction phase of the project. The tax is the hardware purchase of the items multiplied by the local tax rate from the assessor's office. A project developer can use the address of the project site to localize the hardware purchase to the local tax requirements, thereby directly contributing to local taxes. This result becomes an input into the RE Model.

Permitting fees are hyperlocal fees, typically at a municipality or county level, that may be required for new construction projects. These fees directly contribute to the local economy. If they apply to the project, the value of the fees is included in the application or estimated from local fee schedules. As with plant investment tax, these fees typically only apply to the construction phase of the project.

Costs

The costs that are imputed and input in the RE Model consist of net capital costs and operating costs. Net capital costs are the capital costs associated with the project less any tax credits the project may be subject to at a state or federal level, as is the case with many renewable energy technologies. These costs are provided by the applicant, which may have built in assumptions about applying the tax credit to the capital costs and are subject to the local tax rate as inputs into the RE Model.

Operating and maintenance (O&M) costs are provided by the applicant. These costs reflect the annual, ongoing maintenance requirements of the project to maintain peak operating capacity of the system. The annual costs are subject to an O&M escalation factor that reflects the projected increases in cost over time for maintain the project. Ongoing maintenance of these systems require both remote and on-site work.

Over the lifetime of the project, a net present value (NPV) is estimated for O&M. The resulting value is divided by the year one O&M cost to produce a multiplication factor for project expenses that apply to the lifetime of the project. These recurring costs for both the project and the alternative to the project, including an undeveloped site, are maintenance, government revenue, and property taxes.

Community Direct Payments

Direct payments are a mechanism to provide economic support to established local community programs. Payments may occur during the initial outlay of the project, during construction, or continue into operation of the facility. Payment timelines and structures vary and may not meet the specific allocation requirements within Public Resources Code Section 25545.9, so are not included in the RE Model.

RE Model Sectors

Various economic sectors are included within the RE Model. The sectors are plant investment hardware, plant installation, maintenance, plant earnings, government revenue, local property tax and sales tax on installation. They are broken out to estimate the economic impacts for both the proposed project and the site remaining in its current use. Combined, these values estimate the net economic benefits of the project, pursuant to meeting Public Resources Code Section 25545.9.

To estimate the impact at a local level, local share allocations are applied to the total economic value. These local share values are based on applicant provided information, other sources including the county assessor.

From the local project value, the RE Model then applies economic multipliers to estimate direct, indirect, and induced benefits across each sector. The economic multipliers measure the broader overall economic contribution to the local community.

The multipliers used in this study are based on a previously developed California Energy Commission database from the IMPLAN model.

The multiplier results across sectors are then consolidated into three final categories: installation, operation, and government, which includes taxes. These results for the project are compared, using the same modelling approach, to the site remaining undeveloped, to derive the net positive economic impact of the project to the local community.

Detailed descriptions of the RE Model sectors are as follows:

Plant Investment Hardware

Plant investment hardware includes the net capital costs of the project and is subject to the local tax rate to estimate the local impact. The sector is a one-off contribution to local economic impacts.

Plant Installation

Plant installation includes the other fees associated with installing the renewable energy facility such as installation costs and utility interconnect fees. When combined with capital costs, the values equal the total installed cost of the project. As with plant investment hardware, the plant installation sector is a one-off contribution to local economic impacts. The local share of this sector is estimated from a local share allocation to both utility interconnection and installation costs. This rate has been subject to a conservation value.

The conservation factor is included for a few reasons. As many of the components of the installation are physical assets, they are not expected to be produced in the local community, like with the capital costs. Additionally, the human resource requirements for the installation are highly technical and unlikely to be sourced from the local community. Given the length of time for construction and installation, it is expected that the overall contribution will exceed the local tax rate applied to the plant investment hardware but may not be as high as the localized rate submitted by the applicant.

Maintenance

The maintenance sector is the O&M value provided by the applicant. The NPV of O&M was used to derive a multiplier for sectors that will have an ongoing value throughout the lifetime of the project. The local share allocation is the product of the local share allocation for O&M, which is already reduced due to a blend of remote and on-site maintenance requirements, and the conservation factor to avoid overestimating that impact over the lifetime of the project.

Plant Earnings

Plant earnings are the estimated annual revenues from the project, subject to the local tax rate from the tax assessor's office. They are an ongoing value and will vary over time based on utility rates, which typically increase. The multiplier derived from the maintenance sector is applied to estimate the local lifetime impact of the sector.

Government Permitting

Government permitting is the fees associated with building a new project. The fees are not always required for a new construction project. When they are required, 100% of their value is local.

Government Revenue

Government revenue is the estimated annual revenues from the project, subject to the local tax rate from the tax assessor's office. They are an ongoing value and will vary over time based on utility rates, which typically increase. The multiplier derived from the maintenance sector is applied to estimate the local lifetime impact of the sector.

Local Property Tax

Local property tax is the local tax applied to the installation component of the project. The installation value is supplied by the applicant and the local tax share is the difference from the local tax rate and the state tax rate. It is an annual value, subject to the NPV multiplier as the project installation increases property value.

Sales Tax on Installation

The Sales tax on installation is the local share of plant installation, subject to a conservation factor, applied to the installation component of the project. It is a non-recurring value.

Types of Economic Impacts

Most economic stimuli generate three types of impacts: direct impacts, indirect impacts, and induced impacts. Direct impacts generally refer to those impacts that occur first in the economy. These first-round effects are often associated with changes in employment (these impacts can be measured in different metrics: e.g., employment, output, income, value added, etc.) in an industry or institution. Indirect and induced impacts occur after the direct impacts and are often referred to as secondary impacts. Indirect impacts reflect changes in downstream support industries. Induced impacts are the result of employees spending their disposable income. Changes in expenditure levels generate related employment changes in the manufacture and distribution of consumer products.

Economic Multipliers

Economic multipliers⁸ are used to estimate the impact of a change in economic activity, such as the installation of a renewable energy facility, on the overall economy. The multipliers quantify the impacts of spending in one sector across other impacted sectors of the local economy, through multipliers of stimulated demand. Each unique multiplier is applied to the activity sector to estimate the direct, indirect and induced impacts of the new project for the local community.

Table 6 includes the economic multipliers applied to the local impact of the project from the previous section. These multipliers are based on previous CEC renewable energy databases and derived from the IMPLAN model. The economic multipliers generate the total output, employment, personal income, and value added from the new infrastructure project. The same multipliers are used for the undeveloped scenario.

Table 6. Economic Multipliers for Local Economic Output, Employment, Personal Income, and Value Added.

Activities	Output (\$/\$)		
	Direct	Indirect	Induced
Plant Investment Hardware	1	0.35	0.38
Plant Installation	1	0.35	0.38
Maintenance	1	0.3	0.59
Plant Earnings	1	0.21	0.27
Government Permitting & Revenue	1	0.325	0.395
City & County Sales Tax	1	0.325	0.395
Sales Tax on Installation	1	0.325	0.395
Activities	Employment (# jobs/dollar)		
	Direct	Indirect	Induced
Plant Investment Hardware	0.000008	0.000004	0.000005
Plant Installation	0.000008	0.000004	0.000005
Maintenance	0.000034	0.000003	0.000007
Plant Earnings	0.000024	0.000002	0.000003
Government Permitting & Revenue	0.000010	0.000003	0.000005
City & County Sales Tax	0.000010	0.000003	0.000005
Sales Tax on Installation	0.000010	0.000003	0.000005
Activities	Personal Income (\$/\$)		
	Direct	Indirect	Induced
Plant Investment Hardware	0.48	0.14	0.14
Plant Installation	0.48	0.14	0.14
Maintenance	0.58	0.12	0.22
Plant Earnings	1	0.08	0.1
Government Permitting & Revenue	0.43	0.125	0.145

8 <https://support.implan.com/hc/en-us/articles/18944332362523-Economic-Effects-Multipliers>

Activities	Output (\$/\$)		
	Direct	Indirect	Induced
City & County Sales Tax	0.43	0.125	0.145
Sales Tax on Installation	0.43	0.125	0.145
Activities	Value Added (\$/\$)		
	Direct	Indirect	Induced
Plant Investment Hardware	0.55	0.21	0.24
Plant Installation	0.55	0.21	0.24
Maintenance	0.69	0.18	0.37
Plant Earnings	1	0.12	0.17
Government Permitting & Revenue	0.57	0.19	0.245
City & County Sales Tax	0.57	0.19	0.245
Sales Tax on Installation	0.85	0.04	0.12

Economic Results

To estimate the impacts of the project to the local community, a local share allocation was applied to each of the sectors identified in the multipliers. The local share allocations are the expected value that is accrued for the project based on location of production and ongoing use and maintenance of the facility and the local taxes and fees that the project will generate for the local government.

Some of the activity sectors have a 100% local share, meaning that their net economic benefit is expected to be fully local. This could include the instance where a facility uses the local address to purchase hardware or some portion of hardware that is used at the facility. This local purchase decision has a direct impact on local sales tax, at the localized rate, rather than the state rate. Other instances across activity sectors include plant installation, which includes the tie-in to the local utility as well as the various costs associated with site preparation and construction of the facility buildings and amenities that house the system. Maintenance of the facility will be an ongoing requirement with workers on site for routine operation of the facility and long-term upkeep at regular intervals to ensure that the facility operates at peak performance and is in compliance with local regulations.

Plant earnings are the estimated annual revenues from the facility that are generated through arbitrage of the price differential between peak renewable supply and demand, as discussed in the previous revenue section. The community expenditure is the net present value of the long term impact the facility over its lifetime.

Government revenue is the portion of the annual income tax rate on income that is expected to accrue to the local community. In addition, this rate includes permitting fees that the site is expected to generate for the local municipality. The tax benefit to the local community will occur annually, tied to any increase of income the facility generates, while the permitting fees will be a one-off benefit to the city.

Net Economic Benefit Calculation

The RE Model provides a methodology to meet the demonstration of net economic benefit requirements for renewable energy projects subject to Public Resources Code section 25545.9. By deriving results for both the project case and the undeveloped case, the combined results show the net economic benefit of the project, including through property taxes and sales and use tax revenues.

Disclaimer

This report was prepared by Life Cycle Associates, LLC as a subcontractor for Aspen Environmental Group for the CEC Darden Clean Energy Project. Life Cycle Associates is not liable to any third parties who might make use of this work. No warranty or representation, express or implied, is made with respect to the accuracy, completeness, and/or usefulness of information contained in this report. Finally, no liability is assumed with respect to the use of, or for damages resulting from the use of, any information, method or process disclosed in this report. In accepting this report, the reader agrees to these terms.