Draft

SONRISA SOLAR PROJECT

Draft Environmental Impact Report

EIR No. 7869
CUP No. 3677

Prepared for
County of Fresno Department of
Public Works and Planning

June 2024

ESA

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EXECUTIVE SUMMARY

ES.1 Introduction

EDP Renewables CA Solar Park VI, LLC (the Applicant) applied to the Fresno County Department of Public Works and Planning for Unclassified Conditional Use Permit (CUP) No. 3677, proposing to construct, operate, maintain, and ultimately decommission the Sonrisa Solar Project (Project). As proposed, the Project consists of a photovoltaic (PV) solar electricity generating facility upon approximately 2,000 acres of land in Fresno County. The Project would generate renewable energy from ground-mounted single axis tracking arrays and intermittently store electricity by charging and discharging lithium-ion batteries. The Project would have a generating capacity of up to 200 megawatts alternating current (MW_{AC}) and a battery storage capacity of 184 MW_{AC} (with battery duration of approximately 4 hours). The Project would connect to the electrical grid via an approximately 0.2-mile extension to an existing or approved approximately 3.3-mile long 230 kilovolt (kV) transmission line (also called a generation-tie, or gen-tie, line) to reach the point of interconnection to the existing Tranquillity Switching Station, which is owned and operated by Pacific Gas and Electric Company (PG&E). The requested term for the CUP is 35 years. At the conclusion of the requested term of use, the site would be reclaimed as described in Appendix B-1.

Fresno County, serving as the lead agency pursuant to the California Environmental Quality Act (CEQA), has prepared this Draft Environmental Impact Report (EIR No. 7869). This EIR is an informational document that discloses the potential direct, indirect, and cumulative environmental impacts of the Project and alternatives to the Project, and identifies mitigation measures that could, if implemented, avoid or reduce impacts that have been identified as "significant" pursuant to CEQA. The purpose of this EIR is not to recommend either approval or denial of the Project, but rather to inform decision-makers and members of the public of the potential environmental consequences of the Project. Because environmental review informs a portion of the multiple factors that may be taken into consideration when an agency decides whether to approve a proposal, the County also will consider factors outside the scope of CEQA when it decides whether to approve the requested use permit.

ES.2 Project Summary

ES.2.1 Project Site

The Project site proposed for the solar facility consists of approximately 2,000 acres of land in unincorporated western Fresno County. Most of the parcels proposed for Project solar arrays are owned by Westlands Water District (WWD). The parcels are zoned AE-20, Exclusive Agriculture, with a 20-acre minimum parcel size. The site is generally bounded by State Route 33 (SR 33, also

known as South Derrick Avenue) to the west, West Manning Avenue to the south, South Merced Avenue to the east, and West Adams Avenue to the north. West South Avenue bisects the site from east to west. See **Figure ES-1**, **Sonrisa Solar Project Site Location**.

The nearest communities to the Project site include the unincorporated community of Tranquillity, approximately 7 miles to the east; the City of Mendota, approximately 8 miles to the north; and the City of San Joaquin, approximately 9 miles to the east. Agricultural uses, including non-irrigated fields, generally predominate in the vicinity of the Project site, but multiple solar energy facilities are operating or under development in the immediate area of the Project site. These other solar projects include the existing Tranquillity and Adams East solar projects; and the Scarlet and Luna Valley solar projects, which are under construction.

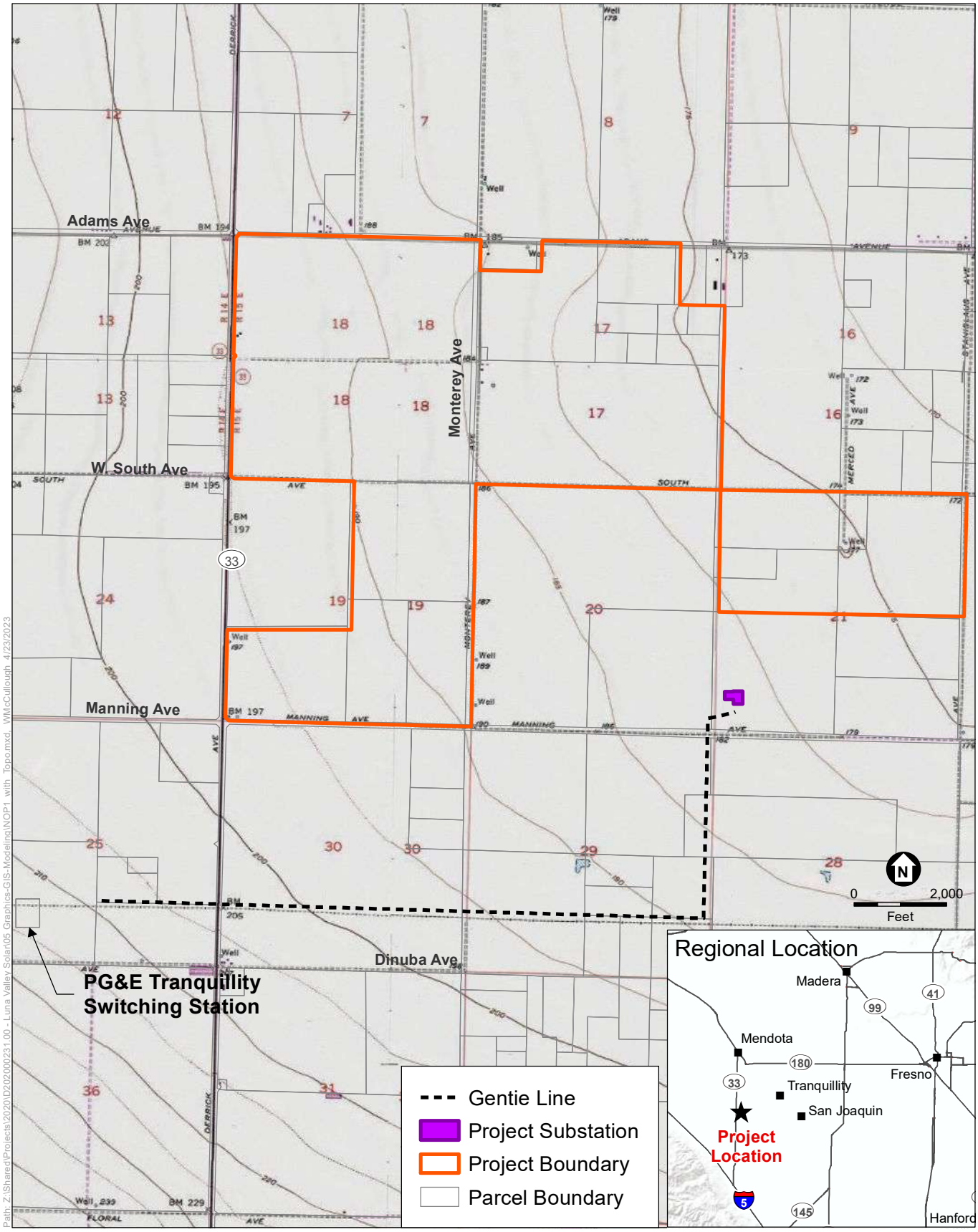
With respect to nearby sites identified as sensitive receptors[1] to air pollutants or noise, the nearest sensitive receptor, a residence, is located at the southeast corner of the intersection of West Adams Avenue and South Monterey Avenue. This residence is approximately 50 feet east of South Monterey Avenue (which may be used for construction access) and 185 feet from the Project site boundary. Additional sensitive receptors include WWD offices and a residence located on the north side of West Adams Avenue approximately 2,000 feet east of SR 33 and approximately 185 feet north of the Project site boundary.

The Project site consists of lands that have been used for dry-farmed (non-irrigated) agriculture (such as rangeland grasses) or which have lain fallow for at least the past 10 years. WWD acquired the property as part of a 2002 settlement agreement in the *Sumner Peck Ranch et al. v. Bureau of Reclamation et al*. lawsuit, which prohibits irrigation on the site via non-irrigation covenants. Together with relatively high levels of selenium and a water table that does not provide sufficient drainage for commercially irrigated crops, the non-irrigation covenants restrict what agricultural use may be made of the property. See **Table ES-1**, *Project Parcel Details*.

ES.2.2 Overview of Project Components

The Project consists of three main components: a solar PV facility with 200 MW_{AC} generating capacity; an energy storage system with 184 MW_{AC} battery storage capacity; and a gen-tie line extension to the point of interconnection with the Tranquillity Switching Station.
See **Figure ES-2, Sonrisa and Scarlet Shared Infrastructure**, for approximate locations. Other necessary infrastructure would include a Project substation and a permanent operation and maintenance (O&M) building (both proposed to be shared with the Scarlet Solar project). The O&M building would be supported by a septic system and leach field. Supervisory Control and Data Acquisition System (SCADA), meteorological data instruments, telecommunications infrastructure, access roads,

[1] Some locations are considered to have a greater than average sensitivity to air pollutants and noise due to the age or pre-existing health conditions of the people found there or due to the location's proximity to sources or the duration of exposure. Hospitals, nursing homes and convalescent facilities, schools, parks, playgrounds, and daycare centers, for example, are sensitive receptors because children, the elderly, and infirm persons are more susceptible than the general public to air quality and noise-related impacts. Residential areas also are sensitive receptors because people usually stay home for extended periods of time, with greater associated exposure to ambient air quality and sounds.



Sonrisa Solar Project

Figure ES-1
Project Location

TABLE ES-1
PROJECT PARCEL DETAILS

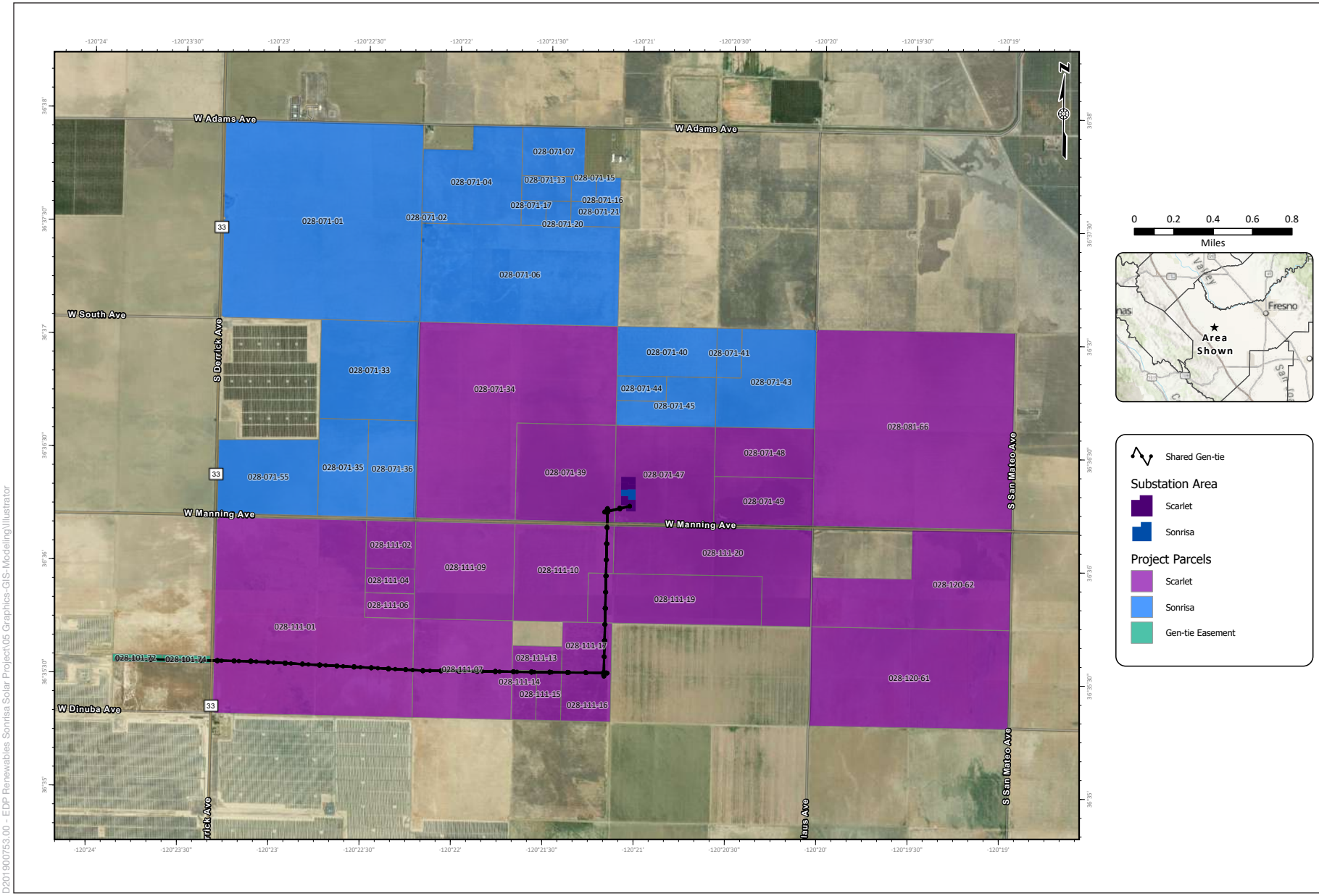
Parcel Number	Current Owner	Non-Irrigation Covenant[a]	Solar or Gen-Tie Line
028-071-15	WWD	Yes	Solar facility
028-071-36	WWD	Yes	Solar facility
028-071-02	WWD	Yes	Solar facility
028-071-33	WWD	Yes	Solar facility
028-071-35	WWD	Yes	Solar facility
028-071-55	WWD	Yes	Solar facility
028-071-20	WWD	Yes	Solar facility
028-071-07	WWD	Yes	Solar facility
028-071-17	WWD	Yes	Solar facility
028-071-16	WWD	Yes	Solar facility
028-071-21	WWD	Yes	Solar facility
028-071-06	WWD	Yes	Solar facility
028-071-01	WWD	Yes	Solar facility
028-071-04	WWD	Yes	Solar facility
028-071-13	WWD	Yes	Solar facility
028-071-40	RE Scarlet, LLC	Yes	Solar facility (analyzed in Scarlet CUP)
028-071-41	RE Scarlet, LLC	Yes	Solar facility (analyzed in Scarlet CUP)
028-071-43	RE Scarlet, LLC	Yes	Solar facility (analyzed in Scarlet CUP)
028-071-44	RE Scarlet, LLC	Yes	Solar facility (analyzed in Scarlet CUP)
028-071-45	RE Scarlet, LLC	Yes	Solar facility (analyzed in Scarlet CUP)
028-071-47	RE Scarlet, LLC	Yes	Project substation (analyzed in Scarlet CUP)
028-071-39		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-01		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-10		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-19		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-17		N/A	Gen-tie Land (analyzed in Scarlet CUP)
028-111-13		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-07		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-14		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-15		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-111-16		N/A	Gen-tie Line (analyzed in Scarlet CUP)
028-101-74	Unknown	N/A	Gen-tie Line
028-101-72	Unknown	N/A	Gen-tie Line

NOTES:

a The parcels under a “non-irrigation covenant” have been taken out of irrigated agricultural production as part of a legal settlement with the Bureau of Reclamation.

CUP = Conditional Use Permit
WWD = Westlands Water District

SOURCES: EDPR, 2019. Appendix C.



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SOURCE: EDP Renewables, 2023

Sonrisa Solar Project

Figure ES-2
Sonrisa and Scarlet Shared Infrastructure

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parking, security fencing, lighting, and signage are also proposed. Although stormwater facilities are not currently anticipated, they may be constructed if they are determined to be needed. An energy storage system also would be provided within the solar facility site. As explained in Appendix C, *Water Supply Assessment*, water needs for the Project could be served via a well to be drilled on-site, by WWD from an existing well, or by delivering water to the site via truck. The Project includes transferring five parcels of PV footprint from the Scarlet Solar Project to the proposed Project and extending a shared gen-tie line and substation to serve both facilities, as depicted on Figure ES-2, Sonrisa and Scarlet Shared Infrastructure.

To interconnect the Project, PG&E would utilize an existing or approved 230 kV transmission line to connect the existing switching station to a shared substation within the Project's proposed solar facility site. The existing 230 kV gen-tie line (analyzed in the Scarlet Solar EIR [Fresno County, 2021b]) would be extended for a length of up to 0.2 miles to connect to the Project's proposed substation. This line would be supported by up to 6 new tubular steel poles of up to 140 feet in height. Associated fiber optic lines could be co-located on the transmission line poles or could require separate, adjacent poles. Potential environmental impacts of this proposed PG&E infrastructure are analyzed in this EIR as part of the Project.

ES.3 Purpose and Use of the Draft EIR

This EIR is an informational document that examines and discloses the potential impacts of the Project and alternatives so that decision-makers and the public can consider the potential environmental consequences of a decision on the requested CUP. The County will rely on this EIR, along with other information in the formal record, in deciding whether to approve, approve with modifications, or disapprove the CUP application. Other agencies with trustee responsibilities or permitting authority over the Project also may rely on this document in deciding whether to approve permits or issue other approvals for the Project.

ES.4 Project Objectives

The Applicant's primary objective for the Project is to construct and operate an economically feasible, commercially financeable 200 MW solar PV power plant.

The objectives of the Project are to:

1. Fulfill the Applicant's executed large generator interconnection agreement for 200 MW solar PV;

2. Provide an energy storage system with 184 MW_{AC} battery storage capacity;

3. Develop a site which is proximate to existing transmission infrastructure to minimize environmental impacts;

4. Reduce environmental impacts by using contiguous lands located near existing solar projects;

5. Support California and Fresno County goals of protecting farmland and conserving groundwater through appropriate siting of the Project upon lands under a "non-irrigation covenant";

6. Increase local short-term and long-term employment opportunities and provide economic benefits to Fresno County;

7. Support the generation of renewable energy in the State of California per the objectives outlined in SB 100 (2018, De León);

8. Provide the California Community Choice Aggregators (CCA) with zero-emissions renewable energy to support the goal of providing clean energy to CCA customers using established solar and energy storage technology in an economically feasible manner; and

9. Generate clean, reliable electricity and provide long-term property tax revenue that would support public services and create jobs within Fresno County and in California.

ES.5 Permits and Approvals

CEQA Guidelines Section 15124(d) requires that an EIR contain a statement briefly describing the intended uses of the EIR. The CEQA Guidelines indicate that the EIR should identify the ways in which the Lead Agency and any responsible agencies would use this document in their approval or permitting processes. The following list summarizes the roles of the agencies that may issue permits or other approvals to construct, operate and maintain, and decommission the Project.

- County approval of Unclassified CUP No. 3677 for the solar energy generating facility. County approvals also may be required if work is to be performed within a County right-of-way (i.e., an encroachment permit from the Road Maintenance and Operations Division of the Department of Public Works and Planning) or for the erection, demolition, or conversion of any building or structure (i.e., building and grading permits).

- San Joaquin Valley Unified Air Pollution Control District confirmation of compliance with the Indirect Source Review Program and stationary source and/or mobile source best performance standards may be required.

- Central Valley Regional Water Quality Control Board authorization may be required if construction activities disturbing more than 1 acre implicate waters of the United States, pursuant to the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit).

- Central Valley Regional Water Quality Control Board authorization may be required under the Waste Discharge Requirements (WDR) Program if the Project will result in discharges to waters of the state.

ES.6 Overview of Project Impacts

Sections 4.2 through 4.20 in Chapter 4, *Environmental Analysis,* provide a detailed discussion of the setting; potential direct, indirect, and cumulative impacts of the Project and alternatives; and mitigation measures designed to reduce potential significant impacts below established thresholds. All of the resource areas in the CEQA Guidelines Appendix G Checklist were analyzed, namely: Aesthetics; Agriculture and Forest Resources; Air Quality; Biological Resources; Cultural and Tribal Cultural Resources; Energy; Geology, Soils, and Paleontological Resources; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Noise; Population and Housing; Public Services; Recreation; Transportation; Utilities and Service Systems; and Wildfire.

ES.6.1 No Impact

The Project would have no impact to any of the following resource areas:

a. Forest Resources
b. Land Use and Planning
c. Mineral Resources
d. Population and Housing
e. Public Services
f. Recreation

ES.6.2 Less than Significant Impacts

The Project would have a less-than-significant impact, or a less-than-significant impact with the implementation of recommended mitigation measures, regarding the following resource areas:

a. Agriculture
b. Air Quality
c. Biological Resources
d. Cultural and Tribal Cultural Resources
e. Energy
f. Geology, Soils, and Paleontological Resources
g. Greenhouse Gas Emissions
h. Hazards and Hazardous Materials
i. Hydrology and Water Quality
j. Noise
k. Transportation
l. Utilities and Service Systems
m. Wildfire

ES.6.3 Significant and Unavoidable Impacts

Section 15126.2(b) of the CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. The Project would cause no significant and unavoidable impacts.

ES.6.4 Irreversible Impacts

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continuing phases of the project. Irreversible impacts can also result from damage caused by environmental accidents associated with a project. Irretrievable commitments of resources are evaluated to ensure that such consumption is justified.

Buildout of the Project would commit nonrenewable resources during construction and ongoing utility services during operations. During operations, some oil, gas, and other fossil fuels and nonrenewable resources would be consumed. However, once operational, the Project would result in a substantial net benefit with respect to nonrenewable resources as a result of the amount of renewable energy that would be generated. See Section 4.9, *Greenhouse Gas Emissions*, for details.

ES.6.5 Summary of Project Impacts and Mitigation Measures

Table ES-2 summarizes the environmental impacts of the Project and recommended mitigation measures that, if adopted, would avoid or substantially reduce potentially significant impacts of the Project. The analysis of each impact is provided on a resource-by-resource basis in Chapter 4.

ES.7 Overview of Alternatives to the Project

CEQA requires an EIR to analyze a reasonable range of alternatives to the project that could feasibly attain the basic objectives of the project while substantially reducing or eliminating significant environmental effects. CEQA also requires an EIR to evaluate a "no project" alternative to allow decision-makers to compare the impacts of approving a project with the impacts of not approving it. The alternatives development and screening process, alternatives eliminated from further consideration, and alternatives considered in the EIR are described in greater detail in Chapter 3, *Alternatives*.

ES.7.1 Alternatives Eliminated from Further Consideration

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA Guidelines §15126.6[c]). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not need to be considered (CEQA Guidelines §15126[f][2]). The following potential alternatives were eliminated from further consideration in the EIR because they failed to meet most of the Project objectives, were infeasible, or did not avoid or substantially reduce any significant environmental effects:

- **Alternative locations:** Alternative locations considered included: i) other potential candidate sites; ii) degraded agricultural lands; and iii) impaired or underused lands.
- **Alternative solar technology:** The alternative technology considered was concentrated solar.
- **Alternative Approaches:** Alternative approaches included: i) conservation and demand side management, and ii) other distributed energy resources.

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Biological Resources		
Impact 4.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-2:** Project operation could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-4:** Construction could conflict with local policies or ordinances protecting biological resources.	**Mitigation Measure 4.5-1: Protection of Special-Status Species During Construction** Preconstruction surveys shall be conducted by a qualified biologist for the presence of San Joaquin kit fox and burrowing owl within 14 days prior to commencement of construction activities pursuant to the USFWS (2011) *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox* and CDFW (2012) staff report for burrowing owl. The surveys shall be conducted in areas of suitable habitat for San Joaquin kit fox and burrowing owl. Areas of suitable habitat are grasslands which have not been disked or cultivated within 12 months prior to the start of ground-disturbing activities. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to disturbance within active portions of the site. If no potential San Joaquin kit fox dens or burrowing owl burrows are identified, no further mitigation is required. If potential kit fox dens are observed and avoidance is determined to be feasible (as defined in CEQA Guidelines §15364 consistent with the USFWS [2011] *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox*) by a qualified biologist in consultation with the Project owner and the County, buffer distances shall be established prior to construction activities. If potential burrowing owl burrows are observed and avoidance is determined to be feasible (as defined in the CDFW 2012 staff report on burrowing owl) by a qualified biologist in consultation with the Project owner and the County, an exclusion plan will be developed with minimum buffer distances prior to construction activities. If avoidance of the potential dens or burrows is not feasible, the following measures shall be implemented to avoid potential adverse effects to the San Joaquin kit fox and/or burrowing owl: • If the qualified biologist determines that potential dens or burrows are inactive, the biologist shall excavate these dens by hand with a shovel to prevent foxes or owls from using them during construction. • If the qualified biologist determines that a potential non-natal kit fox den may be active, an on-site passive relocation program shall be implemented with prior approval from the USFWS. This program shall consist of excluding San Joaquin kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 72 hours to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that the San Joaquin kit foxes have stopped using active dens within the Project boundary, the dens shall be hand-excavated, as stated above for inactive dens. A similar exclusion methodology shall be used for burrowing owl exclusion, as described in the CDFW (2012) staff report on burrowing owl.	**Less than Significant**

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Biological Resources (cont.)		
Impact 4.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-2:** Project operation could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-4:** Construction could conflict with local policies or ordinances protecting biological resources.	**Mitigation Measure 4.5-2: Worker Environmental Awareness Training and Best Management Practices for Biological Resources** During construction, operation and maintenance, and decommissioning of the facility, the Project owner and/or contractor shall implement the following general avoidance and protective measures to protect San Joaquin kit fox, burrowing owl, Swainson's hawk, and other special-status wildlife species: • Prior to the initiation of ground disturbing activities and for the duration of construction and decommissioning activities, the Project owner, or its contractor, shall implement a Worker Environmental Awareness Program (WEAP) to train construction and decommissioning personnel how to recognize and protect biological resources on the Project site. The WEAP training shall be conducted by a qualified biologist. Personnel shall sign a form provided by the trainer documenting their attendance and comprehension of the training. New personnel shall also be trained prior to joining existing work crews as the construction and/or decommissioning proceeds. The WEAP training shall include a review of the special-status species and other sensitive biological resources that could exist in the Project area, the locations of sensitive biological resources and their legal status and protections, and measures to be implemented for avoidance of these sensitive resources, highlighting the birds protected under the California Fish and Game Code and nesting birds protected under the MBTA; San Joaquin kit fox; burrowing owl; and Swainson's hawk. The WEAP training shall indicate the appropriate steps to be taken if a special-status species is observed, which may include work stoppage and coordination with the CDFW and USFWS. • To prevent inadvertent entrapment of wildlife during construction, all excavated, steep-walled holes or trenches with a 2-foot or greater depth shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected by construction personnel for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a special-status species is trapped, the USFWS and/or CDFW shall be contacted immediately. • All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at a construction site for one or more overnight periods shall be thoroughly inspected by construction personnel for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by the qualified biologist. Any vertical tubes (e.g., solar mount poles, chain link fencing poles, or any other hollow tubes or poles) used on the Project site shall be capped immediately after installation to avoid entrapment of birds. • Vehicles and equipment parked on the site shall have the ground beneath the vehicle or equipment inspected by construction personnel for the presence of wildlife prior to moving. • Vehicular traffic shall use existing routes of travel. Cross-country vehicle and equipment use outside of the Project properties shall be prohibited.	**Less than Significant**

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Biological Resources (cont.)		
	• A speed limit of 20 miles per hour shall be enforced within all construction areas. • No work shall be conducted after sunset. • A long-term trash abatement program shall be established for construction, operation, and decommissioning and submitted to the County. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to wildlife such as common raven (*Corvus corax*), coyote (*Canis latrans*), and feral dogs. • Prior to the use of rodenticides as part of any rodent control program during construction, operation, or decommissioning, a rodent control plan shall be developed by the Project owner in coordination with a biologist familiar with special-status species (e.g. San Joaquin kit fox, Swainson's hawk) that occur in the area and could be adversely affected by the use of rodenticides. The plan shall include goals and objectives of rodent control, including that rodent control will only be implemented in focused locations where rodent populations have exceeded acceptable levels and the types of rodent control methods, and shall include pre-use coordination with Fresno County Agricultural Commissioner for recommendation of select rodenticides or other control programs. The rodent control program shall be developed in consultation with a qualified biologist and the Project owner to ensure that methods proposed to control rodents do not impact non-target species. For any rodenticide approved for rodent control, the product label shall be thoroughly examined prior to application to verify if any restrictions exist for application of the product within the range of the San Joaquin kit fox or other endangered or protected animals. Pellet bait rodenticide will be prohibited from use in areas accessible to San Joaquin kit fox. • Workers shall be prohibited from bringing pets (excluding service animals) to the Project site and from feeding wildlife in the vicinity. • No firearms shall be allowed on the Project site during construction, operation, or decommissioning. • Intentional killing or collection of any wildlife species shall be prohibited. • Fencing of the Solar Facility Project site shall incorporate wildlife-friendly fencing design. Fencing plans may use one of several potential designs that would allow kit foxes to pass through the fence while still providing for Project security and exclusion of other unwanted species (e.g., domestic dogs and coyotes). Raised fences or fences with entry/exit points of at least 6 inches in diameter spaced along the bottom of the fence to allow species such as San Joaquin kit fox access into and through the Project site would be appropriate designs.	

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Biological Resources (cont.)		
Impact 4.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-2:** Project operation could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-4:** Construction could conflict with local policies or ordinances protecting biological resources.	**Mitigation Measure 4.5-3: Swainson's Hawk Nest Avoidance** For Swainson's hawk, pre-construction activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee, 2000). Timing and the number of phases of surveys can be adjusted based on the timing of the construction schedule. The surveys may be phased to coincide with active construction areas plus a 0.5-mile buffer of those areas. If an active Swainson's hawk nest is discovered during the nesting season (March 1 through September 15) within 0.5 miles of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities (e.g. noise levels and duration), the location of construction relative to the nest and pre-existing disturbance levels (e.g. construction activities in historically agricultural land versus activities in non-agricultural land), the visibility of construction activities from the nest location (e.g. topography or vegetation that could block line-of-sight to the nest), the number of construction personnel required to perform activities within the setback, and other existing disturbances in the area that are not related to construction activities of this project. Based on this assessment, the biologist will determine if construction activities can proceed, and the level of nest monitoring required. When conducting the assessment, the biologist will consider the following levels of construction activity, with higher levels of activity requiring greater caution in determining setbacks: • Light construction activity such as fence installation and limited vehicle access. Noise levels generated by these construction activities would likely be similar to existing ambient noise levels in closer proximity to the occupied nests. • Moderate and/or isolated construction activity such as grading and construction of substation, substation access road, inverter skids, and manual installation of solar panels. Noise levels generated by these construction activities would likely be similar to existing ambient noise levels beyond a moderate distance from the occupied nests. • Heavy construction activity across a large area of the Project and/or using louder equipment such as pile drivers, concrete saws, or jackhammers. Noise levels for this type of activity will depend on location of the activities relative to the nest and allowing these activities within the 0.5-mile setback would require coordination with CDFW. In the event the assessment determines that construction activities could occur closer than 0.5 miles to an active nest, in no event would construction activities occur within 500 feet of an active nest without approval from CDFW. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks would be required where activity occurs closer than 0.5 miles. The qualified biologist shall have the authority to stop work if it is determined that project construction is disturbing nesting activities. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season. In the event take cannot be avoided, the proponent shall confer with CDFW on the need for an incidental take permit.	

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Biological Resources (cont.)		
Impact 4.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-2:** Project operation could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-4:** Construction could conflict with local policies or ordinances protecting biological resources.	**Mitigation Measure 4.5-4: Protection of Migratory Birds and Other Raptors** If construction or decommissioning is scheduled to commence outside of nesting season (September 1 to January 31), no preconstruction surveys or additional measures are required for nesting birds, including raptors. During the nesting bird breeding season (February 1 to August 31), to avoid impacts to nesting birds in the Project site and immediate vicinity, a qualified biologist shall conduct preconstruction surveys of all potential nesting habitat within the Project site where vegetation removal or ground disturbance is planned. The survey shall be performed within the site and shall also include potential nest sites within 300 feet of the site in areas where access to neighboring properties is available or visible using a spotting scope. Surveys shall be conducted no more than 14 days prior to construction or decommissioning activities. If construction is halted for 14 days or more, the area shall be re-surveyed prior to re-initiating work. Surveys may be phased to occur shortly before a portion of the Project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable buffer (e.g., 300 feet for common raptors; 100 feet for passerines) shall be established around active nests by a qualified biologist and no construction within the buffer allowed until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). Encroachment into the buffer may occur at the discretion of a qualified biologist in coordination with CDFW. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest, or if breeding attempts have been unsuccessful. To minimize the potential for avian injury and mortality from collision and electrocution, the Project will adhere to current Avian Power Line Interaction Committee (APLIC) design standards for overhead powerlines and associated structures, including use of avian-safe line designs, and installation of devices to make powerlines visible to birds (APLIC, 2006, 2012).	**Less than Significant**
Impact 4.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species; **Impact 4.5-2:** Project operation could have a substantial adverse direct or indirect impact on special-status species.	**Mitigation Measure 4.5-5 Protection of Bats** No earlier than 30 days prior to any construction or decommissioning ground disturbance, a qualified bat biologist shall conduct a pre-construction survey for roosting bats in trees to be removed or pruned and structures to be dismantled. Preconstruction surveys for roosting bats shall be conducted during the maternity season (March 1-July 31) for any construction or decommissioning ground disturbance that occurs within 300 feet of habitat capable of supporting bat nursery colonies. A minimum of one (1) day and one (1) evening visit shall take place. If no roosting bats are found, no further action is required. If a bat roost is found, the following measures shall be implemented to avoid impacts on roosting bats. If active maternity roosts are found in trees or structures that shall be removed as part of construction or decommissioning, tree removal or dismantling of that structure shall commence before maternity colonies form (generally before March 1) or after young are flying (generally by July 31). Active maternal roosts shall not be disturbed. If a non-maternal roost of bats is found in a tree or structure to be removed as part of construction or decommissioning, the individuals shall be safely evicted, under the direction of a qualified bat biologist and with approval from CDFW. Removal of the tree or dismantling of the structure should occur no sooner than two nights after the initial minor site modification (to alter airflow), under guidance of the	**Less than Significant**

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Biological Resources (cont.)		
	qualified bat biologist. The modifications shall alter the bat habitat, causing bats to seek shelter elsewhere after they emerge for the night. On the following day, the tree or structure may be removed, in presence of the bat biologist. If any bat habitat is not removed, departure of bats from the construction area shall be confirmed with a follow-up survey prior to start of construction.	
Cultural and Tribal Cultural Resources		
Impact 4.6-1: Ground disturbing activities associated with the Project could cause a substantial adverse change in the significance of a newly-discovered historical or archaeological resource, as defined in CEQA Guidelines Section 15064.5.	**Mitigation Measure 4.6-1: Cultural Resources Awareness Training:** The Project owner shall retain a qualified archaeologist to carry out all mitigation measures related to archaeological and historical resources. Prior to the start of any ground-disturbing activities, the Project owner shall ensure that the qualified archaeologist has conducted a Cultural Resources Awareness Training for all construction personnel working on the Project. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified archaeologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. A sign-in sheet shall be completed, retained by the Project construction contractor for the duration of Project construction to demonstrate attendance at the awareness training, and provided to the County upon the completion of Project construction.	**Less than Significant**
Impact 4.6-1: Ground disturbing activities associated with the Project could cause a substantial adverse change in the significance of a newly discovered historical or archaeological resource, as defined in CEQA Guidelines Section 15064.5.	**Mitigation Measure 4.6-2: Inadvertent Discovery of Cultural Resources:** In the event archaeological materials are encountered during Project activities, the designated Project construction contractor shall immediately cease any ground disturbing activities within 100 feet of the find. The qualified archaeologist (and a Native American-designated representative if the resource is Native American-related) shall evaluate the significance of the resources for California Register of Historical Resources eligibility and recommend appropriate treatment measures to the County and the Project Owner. Per CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall (in coordination with a Native American-designated representative if the resource is Native American-related) develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric, tribal cultural resources, or Native American in nature. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the County and to the Southern San Joaquin Valley Information Center. Construction can recommence based on direction of the qualified archaeologist with the County's agreement.	**Less than Significant**
Impact 4.6-2: Ground disturbing activities associated with the Project could result in damage to previously unidentified human remains.	**Mitigation Measure 4.6-3: Inadvertent Discovery of Human Remains:** If human remains are uncovered during Project activities, the Project owner shall immediately halt work, contact the Fresno County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.55(e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c), and Public Resources Code 5097.98 (as amended). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per Public Resources Code Section 5097.98, and the Project Applicant shall ensure that the immediate vicinity, according to	**Less than Significant**

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Cultural and Tribal Cultural Resources (cont.)		
	generally accepted cultural or archaeological standards or practices where the Native American human remains are located, is not damaged or disturbed by further activity under the landowner has discussed and conferred, as prescribed in Public Resources Code Section 5097.98, with the MLD regarding their recommendation for the disposition of the remains, taking into account the possibility of multiple human remains.	
Geology, Soils, and Paleontological Resources		
Impact 4.8-7: The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Mitigation Measure 4.8-1: Unanticipated Fossil Discovery** Prior to ground disturbing activities for Project construction or decommissioning, the Project owner shall retain a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) to develop and implement a Paleontological Worker Education and Awareness Program (WEAP). If paleontological resources are discovered during ground-disturbing activities (e.g., during Project construction or decommissioning), all earthwork or other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified professional paleontologist can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage is required, recommendations will be consistent with the standards of the SVP that are current as of the discovery and with currently-accepted scientific practice. The current standards of the SVP are set forth in the SVP's 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, as prepared by the SVP's Impact Mitigation Guidelines Revision Committee. If required, treatment for fossil remains may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may also include preparation of a report for publication describing the finds.	**Less than Significant**
Noise and Vibration		
Impact 4.14-1: The Project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**Mitigation Measure 4.14-1: Noise Reduction for Construction Activities** Prior to issuance of construction permits for the proposed project, the Project Applicant shall submit to the County for approval a Construction Noise Reduction Plan to be implemented by all contractors as a condition of contract. Contents of the Plan should include at a minimum: • Maintain all construction tools and equipment in good operating order according to manufacturers' specifications; • Limit use of major excavating, pile driving, and earth-moving machinery to daytime hours; • Equip any internal combustion engine used for any purpose on the job or related to the job with a properly operating muffler that is free from rust, holes, and leaks; • For construction devices that use internal combustion engines, ensure the engine's housing doors are kept closed, and install noise-insulating material mounted on the engine housing consistent with manufacturers' guidelines, if possible; • Limit possible evening and nighttime shift work to the southern and/or western portions of the Project site conducting low noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment; and • Utilize a Complaint Resolution Procedure to address any noise complaints received from residents.	**Less than Significant**

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Transportation		
Impact 4.18-1: Construction of the Project would generate a temporary increase in traffic volumes on area roadways, which could conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	**Mitigation Measure 4.18-1: Construction and Decommissioning Traffic Management Plan** Prior to the issuance of construction or building permits and the issuance of decommissioning authorizations, the Project owner and/or its construction contractor shall prepare and submit a Traffic Management Plan to the Fresno County Public Works Department and the California Department of Transportation, District 6, as appropriate, for approval. The Traffic Management Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following elements: • Temporary Traffic Control (TTC) plan that addresses traffic safety and control through the work zone, including during temporary lane closures (if needed) to accommodate materials delivery, transmission line stringing activities, or any other utility connections; • Identify the timing of deliveries of heavy equipment and building materials; • Requirement for designated construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed; • Requirement to place temporary signage, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic; • Access for emergency vehicles to the Project site shall be ensured; • Access to adjacent properties shall be maintained; • Specify both construction/decommissioning-related vehicle travel and oversize load haul routes, minimizing construction/decommissioning traffic during the a.m. and p.m. peak hour, distributing construction/decommissioning traffic flow across alternative routes to access the Project site, and avoiding residential neighborhoods to the maximum extent feasible. • Requirement to obtain all necessary permits for the work within the road right of way or use of oversized/overweight vehicles that would utilize County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Fresno County Divisions of Public Works and Planning.	**Less than Significant**
Impact 4.18-1: Construction of the Project would generate a temporary increase in traffic volumes on area roadways, which could conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	**Mitigation Measure 4.18-2: Preconstruction and Pre-Decommissioning Road Survey Report** Prior to Project construction and decommissioning, a preconstruction report and a pre-decommissioning report shall be prepared by a qualified registered engineer, retained by the Project owner, to include a detailed analysis of road suitability to accommodate haul trucks during Project construction and decommissioning. The report shall be submitted to the Fresno County Department of Public Works and Planning. Prior to initiating the preconstruction or decommissioning report, the proposed methodology shall be presented to the Fresno County Department of Public Works and Planning for review and approval. Improvements to existing roads, to be implemented by the Project owner, may be necessary based on the findings of the report.	**Less than Significant**

TABLE ES-2 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Transportation (cont.)		
Impact 4.18-1: Construction of the Project would generate a temporary increase in traffic volumes on area roadways, which could conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	**Mitigation Measure 4.18-3: Road Repair Agreement** Prior to the start of construction, the Project owner shall enter into a secured agreement with the County to ensure that the Project contributes its fair-share portion toward repairs of County roads that are demonstrably damaged by this Project including but not limited to West Manning Avenue and West Adams Avenue, between SR 33 and the Project driveways, and South Monterey Avenue. Subject to the discretion of the County of Fresno and Caltrans District 6, roadway impacts shall be mitigated either by construction of an overlay, reconstruction of the pavement section, or by participating financially for the costs of the mitigation to the extent of the Project's fair share (Fresno County 2018).	**Less than Significant**

ES.7.2 Alternatives Considered in the EIR

The reasonable range of alternatives analyzed in this Draft EIR is summarized below. Five alternatives to the Project were considered, of which two were carried forward for more detailed review. The Reduced Acreage Alternative is described in Section 3.3.1 and the No Project Alternative is described in Section 3.3.2.

Alternative 1: Reduced Acreage Alternative

Under Alternative 1, a solar energy generating facility and battery storage project would be constructed, operated and maintained, and decommissioned upon a smaller footprint within the Project site. The PG&E infrastructure would be built and operated to support renewable energy development on the Project site, with the exception that under Alternative 1, the size and capacity of the proposed solar facility would be reduced by 20 percent. This would equate to a project that is approximately 80 percent of the Project as proposed, and so would result in a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW of solar energy generation capacity and 147 MW of battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The area of potential disturbance would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce the Project's potential significant impacts relating to vehicle emissions, noise, and traffic. However, Alternative 1 would not meet the Project's objective to fulfill the Applicant's executed large generator interconnection agreement for 200 MW solar PV or its objective to install 184 MW of battery storage.

No Project Alternative

CEQA Guidelines Section 15126.6 requires consideration of a No Project Alternative. This analysis discusses the existing conditions at the time the Notice of Preparation (NOP) was published, as well as what reasonably would be 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.

Under a No Project Alternative, the Project site would continue to be used for dry-farmed agriculture and/or left fallow unless and until a different use is proposed. The Project site is designated "Agriculture" as shown on Fresno County General Plan Countywide Land Use Diagram Figure LU-1a (Fresno County, 2000) and is zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) (Fresno County, 2017). If the Project were not approved, then other uses consistent with the AE-20 zoning designation could be made on one or more of the parcels that comprise the Project site. Pursuant to Fresno County Ordinance Code Section 816, uses (among others) that are allowed by right without a permit relate to livestock, poultry, and crops; home occupations; agricultural products; apiaries; kennels; and welding and blacksmith shops. No such competing proposals for site use are before the County. Accordingly, rather than speculate as to possible other uses, the analysis of the No Project Alternative in this Draft EIR

assumes a no-development/no Project scenario where the existing agricultural use is continued as it exists under pre-Project conditions.

Under a no-development scenario, the property would continue in agricultural use and the existing environmental setting would be maintained. Changes to that setting, including changes to the landscape (visual resources, habitat, and land use/agriculture); Project-related construction noise, traffic, and air emissions would not occur; and potential ground-disturbance related impacts to cultural tribal cultural resources, wildlife habitat, and environmental benefits relating to maintaining the existing groundcover as it relates to dust control or carbon sequestration, or benefits relating to renewable energy generation would not be realized from solar development of the site.

The No Project Alternative would avoid all Project-related impacts. It would cause no new impacts on the physical environment; i.e., existing land uses would continue to affect environmental conditions as they are now. No legal, regulatory, or technical feasibility issues were identified that would eliminate the No Project Alternative from consideration. However, the No Project Alternative would not meet any of the Project objectives.

ES.7.3 Comparison of Alternatives

Draft EIR Chapter 5, *Comparison of Project and Alternatives*, compares the potential environmental impacts of the Project to those of the No Project Alternative and Alternative 1; **Table ES-3** summarizes them. The No Project Alternative would avoid all impacts of the Project and instead would result in the environmental benefits and consequences that reasonably would be expected to occur based on the site's current use as dry-farmed rangeland grasses or fallowed, non-irrigated agricultural land.

ES.8 Environmentally Superior Alternative

The CEQA Guidelines define the environmentally superior alternative as that alternative with the least adverse impacts to the project area and its surrounding environment. The No Project Alternative is considered the environmentally superior alternative for CEQA purposes because it would avoid all impacts of the Project. However, the No Project Alternative would fail to meet the basic objectives of the Project (see Section ES.4, *Project Objectives*), including, but not limited to:

1. Fulfill the Applicant's executed large generator interconnection agreement for 200 MW solar PV;
2. Provide an energy storage system with 184 MW_{AC} battery storage capacity;
3. Support California and Fresno County goals of protecting farmland and conserving groundwater through appropriate siting of the Project upon lands under a "non-irrigation covenant";
4. Increase local short-term and long-term employment opportunities and provide economic benefits to Fresno County;
5. Support the generation of renewable energy in the State of California per the objectives outlined in SB 100 (2018, de León);

TABLE ES-3
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Resource Area	Project	Reduced Acreage Alternative	No Project Alternative
Aesthetics	Impacts determined to be Less than Significant.	Impacts would be similar, also less than significant, but reduced compared to the Project. **Less than the Project**	No impacts. **Less than the Project**
Agriculture and Forestry Resources	Impacts determined to be Less than Significant.	Impacts would be the same as for the Project. Less than Significant. **Equivalent to the Project**	No Impacts. **Less than the Project**
Air Quality	Impacts determined to be Less than Significant.	Impacts would be similar in type but reduced in scale compared to the Project. Less than Significant. **Less than the Project**	No impacts. **Less than the Project**
Biological Resources	Impacts determined to be Less than Significant with Mitigation Incorporated.	Potentially reduced impacts to Swainson's hawk nesting and foraging habitat. Other impacts would be similar in type but reduced in scale compared to the Project. Less than Significant. **Less than the Project**	No Impacts. **Less than the Project**
Cultural and Tribal Resources	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar but reduced compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. **Less than the Project**	No impacts **Less than the Project**
Energy	Impacts determined to be Less than Significant; beneficial contribution resulting from generation of renewable energy.	Impacts (including beneficial contribution to energy supply) would be similar to the Project but reduced in scale. Less than Significant. **Equivalent to the Project**	No adverse or beneficial impact.
Geology, Soils, and Paleontological Resources	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No Impacts. **Less than the Project**
Greenhouse Gas Emissions	Impacts determined to be Less than Significant; overall beneficial impact from net GHG reduction.	Impacts would be the same as the Project, Reduced Acreage Alternative would involve reduced GHG emissions during construction compared to the Project, but would result in a reduction in renewable power generation once operational. The operational beneficial impact from net GHG reduction would be reduced in comparison to the Project. Less than Significant. **Equivalent to the Project**	No adverse or beneficial impact.

TABLE ES-3 (CONTINUED)
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Resource Area	Project	Reduced Acreage Alternative	No Project Alternative
Hazards and Hazardous Materials	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant with Mitigation. **Less than the Project**	No impacts. **Less than the Project**
Hydrology and Water Quality	Impacts determined to be Less than Significant.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No Impacts. **Less than the Project**
Land Use and Planning	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Mineral Resources	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Noise	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No impacts. **Less than the Project**
Population and Housing	Impacts determined to be Less than Significant.	Impacts would be the same as for the Project. Less than Significant. **Equivalent to the Project**	No Impacts. **Less than the Project**
Public Services	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Recreation	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Transportation	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant with Mitigation. **Less than the Project**	No Impacts. **Less than the Project**

TABLE ES-3 (CONTINUED)
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Resource Area	Project	Reduced Acreage Alternative	No Project Alternative
Utilities and Service Systems	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar but reduced compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant with Mitigation. **Less than the Project**	No impacts. **Less than the Project**
Wildfire	Impacts determined to be Less than Significant.	Impacts would be similar but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No impacts. **Less than the Project**

6. Provide the California Community Choice Aggregators (CCA) with zero-emissions renewable energy to support the goal of providing clean energy to CCA customers using established solar and energy storage technology in an economically feasible manner; and

7. Generate clean, reliable electricity and provide long-term property tax revenue that would support public services and create jobs within Fresno County and in California.

Since the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives.

There are no significant and unavoidable impacts that cannot be reduced to a less-than-significant level under the Project or Reduced Acreage Alternative. The Reduced Acreage Alternative would incrementally reduce impacts in most issue areas relative to the unmitigated Project, but the impact conclusions would be the same as the mitigated Project.

In other areas, the Project could be preferred because, relative to the Reduced Acreage Alternative, it would generate the greatest amount of renewable energy, and so would offset the most metric tons of carbon dioxide emissions generated by fossil fuels and provide greater assistance to the State toward meeting the renewable energy generation targets set in SB 100. The Project would also provide a greater capacity for battery energy storage and meet all the identified objectives.

The County preliminarily has identified the Project as the environmentally superior action alternative because of the beneficial effects associated with the greater amount of renewable energy it would produce compared to the other alternatives and because it can provide these beneficial effects while mitigating all adverse effects to a less-than-significant level such that the Reduced Acreage Alternative would neither avoid nor "substantially lessen" the Project's impacts once mitigation is accounted for.

ES.9 Areas of Controversy

Any of the environmental issues considered during scoping or in this Draft EIR could become an issue of controversy. Preliminarily, the County has not identified any areas of controversy as few issues were raised during the scoping period; all comments received during the scoping period are included in the Project Scoping Report, which is included as **Appendix A** to this Draft EIR.

ES.10 Issues to be Resolved

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, which include the choice among alternatives and whether or how to mitigate significant impacts. The following major issues are to be resolved:

- Determine whether the EIR adequately describes the environmental impacts of the Project;
- Determine whether the recommended mitigation measures should be adopted or modified;

- Determine whether additional mitigation measures need to be applied to the Project; and
- Choose among alternatives.

ES.11 References

Avian Power Line Interaction Committee (APLIC), 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*. PIER Final Project Report CEC-500-2006-022.

APLIC, 2012. *Reducing Avian Collisions with Power Lines: The State of the Art in 2012.* October.

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EDPR CA Solar Park VI, LLC., 2019. Sonrisa Solar Park CUP Application Responses to Solar Siting Guidelines submitted to Fresno County Department of Public Works and Planning. August 1, 2019.

Fresno County, 2017. Solar Facility Guidelines. Approved by Fresno County Board of Supervisors on May 3, 2011, revised on December 12, 2017.

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Swainson's Hawk Technical Advisory Committee, 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. May 31, 2000. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83990. Accessed October 4, 2022.

U.S. Fish and Wildlife Service (USFWS), 2011. *Standard Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*. Prepared by the Sacramento Fish and Wildlife Office. June, 2011.

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CHAPTER 1
Introduction

1.1 Purpose of this Document

This Draft Environmental Impact Report (EIR No. 7869) is an informational document that identifies and discloses the potential environmental impacts of the Sonrisa Solar Project (Project), as proposed by EDP Renewables CA Solar Park VI, LLC (Applicant). Fresno County (the County) will rely on this EIR, along with other information in the formal record, in deciding whether to approve, approve with modifications, or disapprove the application for the Unclassified Conditional Use Permit requested for the Project (CUP No. 3677). Other agencies with trustee responsibilities or permitting authority over the Project also may rely on this document in deciding whether to approve permits or issue other approvals for the Project.

1.2 Project Overview

The Project consists of construction, operation, and decommissioning of a solar photovoltaic (PV) electricity generating facility upon approximately 2,000 acres of land in Fresno County. The Project would generate renewable energy from ground-mounted single axis tracking arrays and intermittently store electricity by charging and discharging lithium-ion batteries. The Project would have a generating capacity of up to 200 megawatts alternating current (MW_{AC}) and a battery storage capacity of 184 MW_{AC} (with battery duration of 4 hours). The Project would connect to the electrical grid via an up to 3.5-mile long 230 kilovolt (kV) transmission line (also called a generation-tie, or gen-tie line) to reach the point of interconnection to the existing Tranquillity Switching Station, which is owned and operated by the Pacific Gas and Electric Company (PG&E).

PG&E's expansion of its Tranquillity Switching Station and installation of approximately 1,900 feet of new transmission line would be needed to connect the Project to the electrical grid. While the County does not have authority to approve PG&E's switching station expansion or transmission line construction, which are under the jurisdiction of the California Public Utilities Commission (CPUC), the environmental impacts of these activities are analyzed in this EIR as part of the Project.

1.3 Use of this Document by Agencies

CEQA Guidelines Section 15124(d) requires that an EIR contain a statement briefly describing the intended uses of the EIR. The CEQA Guidelines indicate that the EIR should identify the ways in which the Lead Agency and any responsible agencies would use this document in their approval or permitting processes. The following discussion summarizes the roles of the agencies and the intended uses of the EIR.

Fresno County, as the "Lead Agency" for purposes of CEQA, has directed the preparation of this Draft EIR, and has the primary responsibility for considering whether to grant its discretionary approval of the Project under CUP No. 3677. Other necessary County approvals may include an encroachment permit from the Road Maintenance and Operations Division of the Department of Public Works and Planning if work is to be performed within a County right-of-way, vacation of street easements, and/or construction, building, and grading permits for the erection, demolition, or conversion of any building or structure.

Other agencies also may rely on information in this Draft EIR to inform their own permitting decisions and approvals for the Project, potentially including the following:

- Central Valley Regional Water Quality Control Board: Notice of Intent to comply with National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharge Associated with Construction Activity (Construction General Permit);
- California Department of Transportation (Caltrans): Encroachment permit and permit for transportation of oversized loads;
- California Public Utilities Commission: Notice of Construction pursuant to General Order 69; Section 851 of Public Utilities Code;
- San Joaquin Valley Air Pollution Control District: Authority to Construct/Permit to Operate; approval of stationary and/or mobile sources of air pollution may be required;

1.4 Public Participation

1.4.1 Scoping

On November 2, 2020, the County published and distributed a Notice of Preparation (NOP) to advise interested local, regional, state, and federal agencies, as well as the public, that an EIR would be prepared for the Project. The NOP was sent to a mailing list that included Tribes; local, state, and federal agencies; property owners within 1-mile of the Project site; other interested parties; and the Governor's Office of Planning and Research, State Clearinghouse. The NOP and NOP mailing list are included in the Scoping Report provided as **Appendix A**. The NOP also was posted with the Fresno County Clerk, emailed to all on the initial project-specific distribution list for whom the County had an email address, and was posted on the County's website. The NOP solicited comments on the scope, content, and format of the EIR. Agencies and members of the public were encouraged to submit their comments to the County by email or through U.S. mail. In addition to the NOP, on November 2, 2020, the County notified the public about the virtual

public scoping meeting through publication of a legal advertisement in The Business Journal, which is a newspaper widely distributed throughout Fresno County. Notifications provided basic Project information, the date, time, and information about how to participate in the scoping meeting, and a brief explanation of the public scoping process.

The County conducted a virtual public scoping meeting via Zoom webinar with a call-in option on November 17, 2020, from 6 p.m. to 6:30 p.m. The Public Scoping Meeting presentation included an overview of the Project, the County's land use and permitting process, and the environmental review process. Input was requested as to environmental considerations of particular interest and with respect to potential alternatives to the Project. Meeting participants included: Jeremy Shaw, Christina Monfette, David Randall, and Chris Motta of Fresno County Department of Public Works and Planning; Janna Scott, Maria Hensel, and Larry Kass of ESA; and Applicant representatives. One member of the public attended the scoping meeting. No comments were received during the meeting.

Six letters were received during the scoping period. Issues raised in each are summarized in the Scoping Report, which includes the letters and is provided as Appendix A.

1.4.2 Public Comment on the Draft EIR

This Draft EIR is available to Tribes, federal, state, and local agencies and to interested individuals who may wish to review and comment on the report. An electronic copy of the Draft EIR and reference materials relied upon in its drafting will be provided via the County's website: http://www.co.fresno.ca.us/EIR.

Printed copies of the Draft EIR, or electronic copies provided on CD or a "thumb drive," will be available at each of the locations listed below. Electronic copies at these locations will contain copies of the reference materials cited and relied upon in the analysis.

- Fresno County Public Works and Planning Department, 2220 Tulare Street, Fresno;
- Fresno County Main Library, Reference Department, 2420 Mariposa Street, Fresno; and
- Fresno County Library Tranquillity Branch Library, 25561 Williams Avenue, Tranquillity.

Written comments may be submitted to the County during a 45-day public review period. Written comments on this Draft EIR will be accepted via email and U.S. Post. All comments received will be addressed in a Response to Comments document, which, together with this Draft EIR, will constitute the Final EIR for the Project.

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CHAPTER 2
Project Description

2.1 Project Overview

EDP Renewables North America, LLC (EDPR or the Applicant) has submitted an application to the Fresno County Department of Public Works and Planning for an Unclassified Conditional Use Permit (CUP)[1] to construct, operate, maintain, and eventually decommission a photovoltaic (PV) solar electricity generating facility upon approximately 2,000 acres of land in Fresno County. The proposed Sonrisa Solar Park (Project) would generate renewable energy from ground-mounted single-axis tracking arrays and would intermittently store electricity by charging and discharging lithium-ion batteries. The Project would have a generating capacity of up to 200 megawatts alternating current (MW_{AC}[2]) and a battery storage capacity of 184 MW_{AC} (with battery duration of 4 hours). The Project would extend (by approximately 0.2 mile) and share use of an existing or approved approximately 3.3-mile long 230 kilovolt (kV) transmission line (also called a generation-tie, or gen-tie line) to the existing Tranquillity Switching Station, which is owned and operated by Pacific Gas and Electric Company (PG&E). In addition to the shared use of the gen-tie line and switching station, which is being considered as part of the Scarlet Solar EIR (Fresno County, 2021), the Project would share other facilities with Scarlet Solar, including an electrical substation and other infrastructure to support efficient operation and maintenance of the sites. The Project would include approximately 300 acres of land to be transferred from the approved adjacent Scarlet Solar project.

2.2 Location of the Project Site

The Project site includes the proposed solar facility and the corridor where PG&E's transmission line construction would occur. The solar facility site is located in the central San Joaquin Valley, approximately 11 miles east of Interstate 5 (I-5) and adjacent to and east of State Route 33 (SR 33, also known as South Derrick Avenue) in unincorporated Fresno County (see **Figure 2-1***, Project Location*). Analysis of the facilities proposed to be shared with the Scarlet Solar Project is documented in Fresno County EIR 7230.

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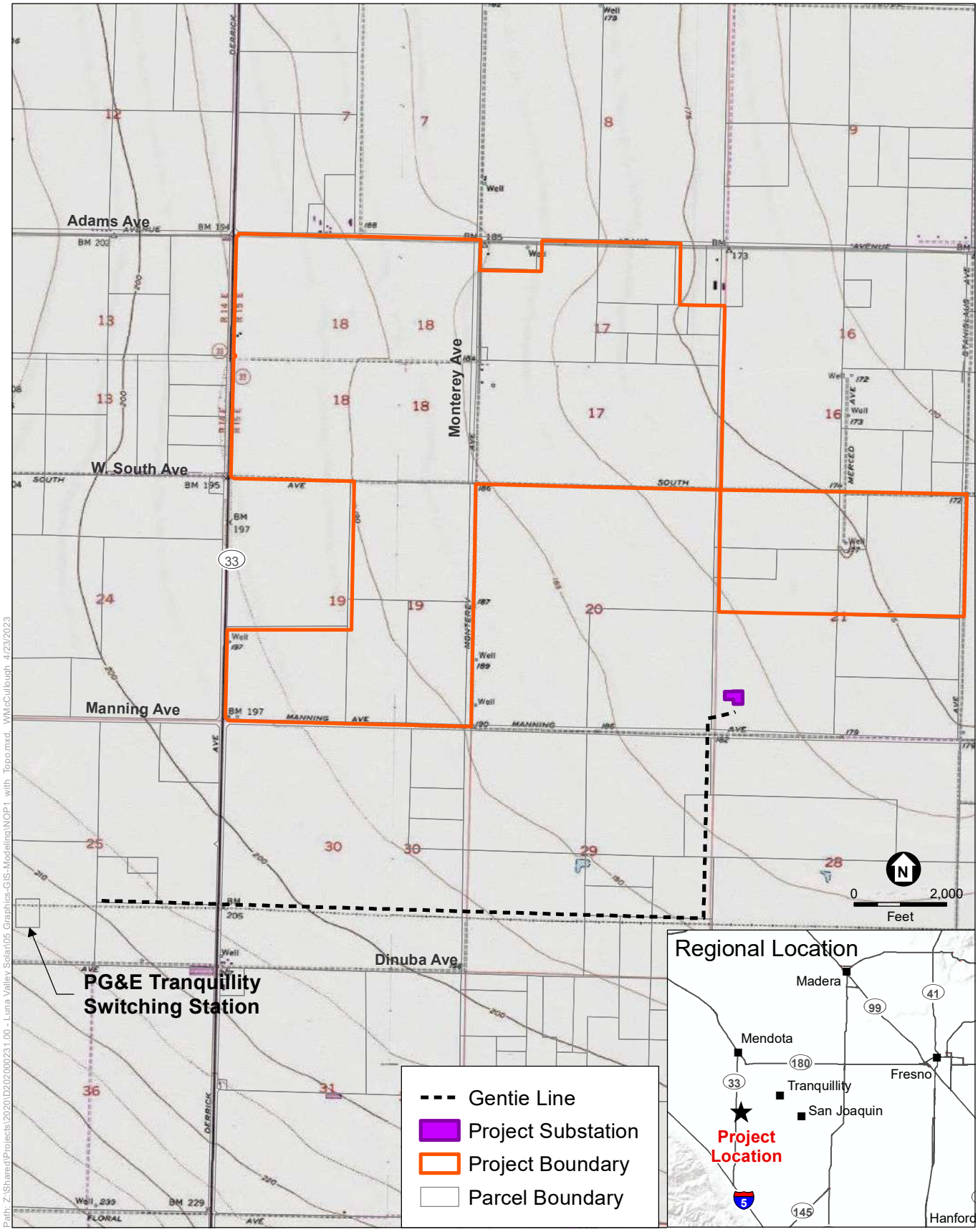
1 The Unclassified CUP process allows the County to consider, in its discretion, uses that would be essential or desirable, but that are not allowed as a matter of right within a zoning district. PV solar power generation facilities may be permitted in any zoning district with the issuance of a CUP.

2 PV panel capacity generally is measured in direct current (DC) watts; however, because the DC output from panels must be converted to alternating current (AC) before being distributed on the electric grid, this EIR reports expected capacity in terms of AC watts. Although preliminary estimates indicate that 200 MW_{AC} would be the expected nominal generating capacity of the Project, the actual generating capacity would depend on the efficiency of the PV panels available at the time of construction and the layout and tracking technology approved.



Sonrisa Solar Project

Figure 2-1
Project Location

The Project site consists of a total of thirty-three (33) parcels,[3] twenty (20) of which would be developed with PV solar and twelve (12) of which would be associated with the interconnection and gen-tie line, and one parcel would be used for the substation and interconnection (shared with the Scarlet Solar facility). The Project site and the proposed point of interconnection are located within Sections 17, 18, 19, 20, 21, and 29 of Township 15 South, and Range 15 East (Mount Diablo Base and Meridian). The solar facility site is generally bounded by West Manning Avenue to the south, SR 33 to the east, West Adams Avenue to the north, and South Stanislaus Avenue to the west. Access to the solar facility site would be provided from West Manning Avenue on the southern portion of the Project site and from West Adams Avenue at Monterey Avenue to the north. The Tranquillity Switching Station is located on APN 028-101-81S within Section 25 of Township 15 South and Range 14 East to the west of South Ohio Avenue and SR 33, and to the north of West Dinuba Avenue. Access to the Tranquillity Switching Station would continue unchanged relative to existing conditions. The nearest communities to the Project site include the unincorporated community of Tranquillity (approximately 7 miles to the east), the City of Mendota (approximately 8 miles to the north), and the City of San Joaquin (approximately 9 miles to the east).

2.3 Existing Land Uses

2.3.1 On-site Land Uses

The approximately 2,000-acre site (proposed for solar use) is on lands in western Fresno County predominantly owned by Westlands Water District (WWD). The Fresno County General Plan land use designation for the site is "Agriculture," and the parcels are zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size). The Project site has been either dry farmed (non-irrigated) for grain cultivation or left fallow over the last 10 years (Appendix D). The land is drainage-impaired, cannot legally be irrigated, and, like much of WWD's ownership, is subject to elevated salt concentrations that render the property unsuitable for reliable, sustainable agriculture.

The General Plan designation and zone district of the Tranquillity Switching Station are the same as those in effect for the Project's solar facility site. Existing uses on this portion of the Project site include PG&E's operation and maintenance of the existing Tranquillity Switching Station, overhead transmission lines, and related infrastructure.

[3] The assessor's parcel numbers (APNs) for the Project are the following: 028-071-15, 028-071-36, 028-071-02, 028-071-33, 028-071-35, 028-071-40, 028-071-41, 028-071-43, 028-071-44, 028-071-45, 028-071-55, 028-071-20, 028-071-07, 028-071-17, 028-071-16, 028-071-21, 028-071-06, 028-071-01, 028-071-04, and 028-071-13; the gen-tie line, including portions shared with the Scarlet Solar project, would cross APNs 028-101-74, 028-101-72, 028-071-39, 028-111-01,028-111-07, 028-111-10, 028-111-13, 028-111-14, 028-111-15, 028-111-16, 028-111-17, and 028-111-19; the proposed shared substation would be on APN 028-071-47.

2.3.2 Surrounding Land Uses

Existing agricultural uses, including non-irrigated fields (owned mostly by the WWD), generally surround the Project site. Existing solar energy facilities operating in the immediate vicinity of the Project site include the Tranquillity and Adams East solar projects.

The Tranquillity Solar project is located on 39 parcels totaling approximately 3,732 acres. The Tranquillity project includes eight power blocks of solar arrays, eight electrical substations, PG&E's Tranquillity Switching Station, up to 200 MW of on-site energy storage, and other infrastructure with the capacity to generate up to 400 MW_{AC}.

The Adams East Solar project is located on approximately 322 acres south of West South Avenue and east of SR 33. It is not a part of the Project, and is not included within the Project site. The Adams East Solar project has the capacity to generate approximately 19 MW_{AC}.

The Scarlet Solar project is adjacent to the Project site. The proposed Project includes transferring five parcels of PV footprint from the Scarlet Solar project to the proposed Project and extending a shared gen-tie line and substation to serve both facilities, as depicted on Figure ES-2, Sonrisa and Scarlet Shared Infrastructure.

With respect to nearby sites identified as sensitive receptors[4] to air pollutants or noise, the nearest sensitive receptor, a residence, is located at the southeast corner of the intersection of West Adams Avenue and South Monterey Avenue (approximately 50 feet east of South Monterey Avenue and 185 feet from the Project site boundary). An additional sensitive receptor near WWD offices includes a residence located approximately 185 feet north of the Project site boundary, on the north side of West Adams Avenue, approximately 2,000 feet east of SR 33.

2.4 Project Objectives

The Applicant's primary goal for the Project is to construct and operate an economically feasible, commercially financeable 200 MW solar PV power plant.

The objectives of the Project are to:

1. Fulfill the Applicant's executed large generator interconnection agreement for 200 MW solar PV;
2. Provide an energy storage system with 184 MW_{AC} battery storage capacity;
3. Develop a site which is proximate to existing transmission infrastructure to minimize environmental impacts;

[4] Some locations are considered to have a greater than average sensitivity to air pollutants and noise due to the age or pre-existing health condition of the people found there or due to the location's proximity to sources or the duration of exposure. Hospitals, nursing homes and convalescent facilities, schools, parks, playgrounds, and daycare centers, for example, are sensitive receptors because children, the elderly, and infirm persons are more susceptible than the general public to air quality- and noise-related impacts. Residential areas also are sensitive receptors because people usually stay home for extended periods of time, with greater associated exposure to ambient air quality and sounds.

4. Reduce environmental impacts by using contiguous lands located near existing solar projects;
5. Support State of California and Fresno County goals of protecting farmland and conserving groundwater through appropriate siting of the Project upon lands under a "non-irrigation covenant";
6. Increase local short-term and long-term employment opportunities and provide economic benefits to Fresno County;
7. Support the generation of renewable energy in the State of California per the objectives outlined in SB 100 (2018, De León);
8. Provide the California Community Choice Aggregators (CCA) with zero-emissions renewable energy to support the goal of providing clean energy to CCA customers using established solar and energy storage technology in an economically feasible manner; and
9. Generate clean, reliable electricity and provide long-term property tax revenue that would support public services and create jobs within Fresno County and in California.

2.5 Description of the Project

The Project consists of three main components: a solar PV facility with 200 MW_{AC} generating capacity; an energy storage system with 184 MW_{AC} battery storage capacity; and an extension to an existing gen-tie line connecting with the Tranquillity Switching Station (see **Figure 2-2***, Site Plan*). Other necessary infrastructure would include a Project substation, a permanent operation and maintenance building, a Supervisory Control and Data Acquisition System (SCADA), meteorological data collection equipment, telecommunications infrastructure, access roads, parking, and security fencing.

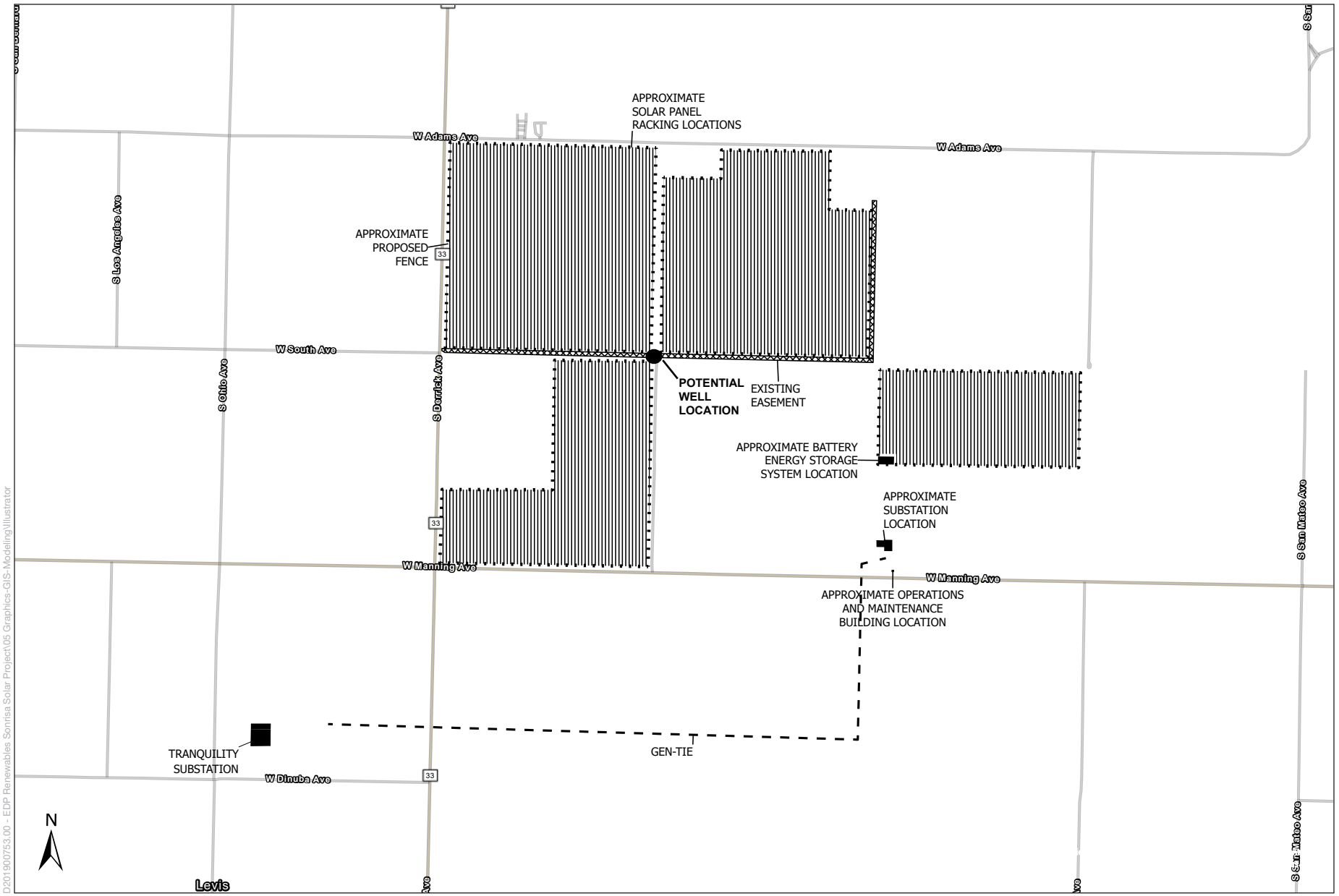
2.5.1 Solar Facility

2.5.1.1 Solar PV Generating Components

The Project would be comprised of installed arrays of solar PV modules that would convert solar energy directly to electrical power and that would supply that power to the existing electrical grid. The solar PV modules would convert the sunlight reaching the modules into low voltage direct current (DC) power. Power from groups of modules would be combined at an inverter, where the power would be converted to alternating current (AC) power and transformed to higher voltage at the substation to provide for transmission.[5]

The PV solar modules would most likely be mounted on a single-axis horizontal tracking system. PV modules would be installed on a rack with a rotating-gear drive to track the sun and optimize solar energy collection capability. When the sun is directly overhead, the modules would be oriented at a 0-degree angle (level to the ground). PV solar modules would be arranged in rows oriented north-to-south and powered by a drive motor to track the east-west path of the sun on a

[5] "AC" is when electric current flows rapidly forward and backward; this is what the grid uses to operate. "DC" is where the current flows in a single direction. Solar panels produce, and batteries store, DC energy. DC is converted to AC using an inverter.



SOURCE: EDP Renewables, 2022

EDP Renewables Sonrisa Solar Project

Figure 2-2
Site Plan

ESA

single axis throughout the day. The height of the modules would vary from approximately 6 feet above the ground surface at a horizontal position, to approximately 9 feet above the ground surface when vertical (i.e., when the panels are at a 45-degree tilt). The highest point would occur during the early morning and evening hours. The mounting system would be supported by steel posts driven 4 to 5 feet into the ground.

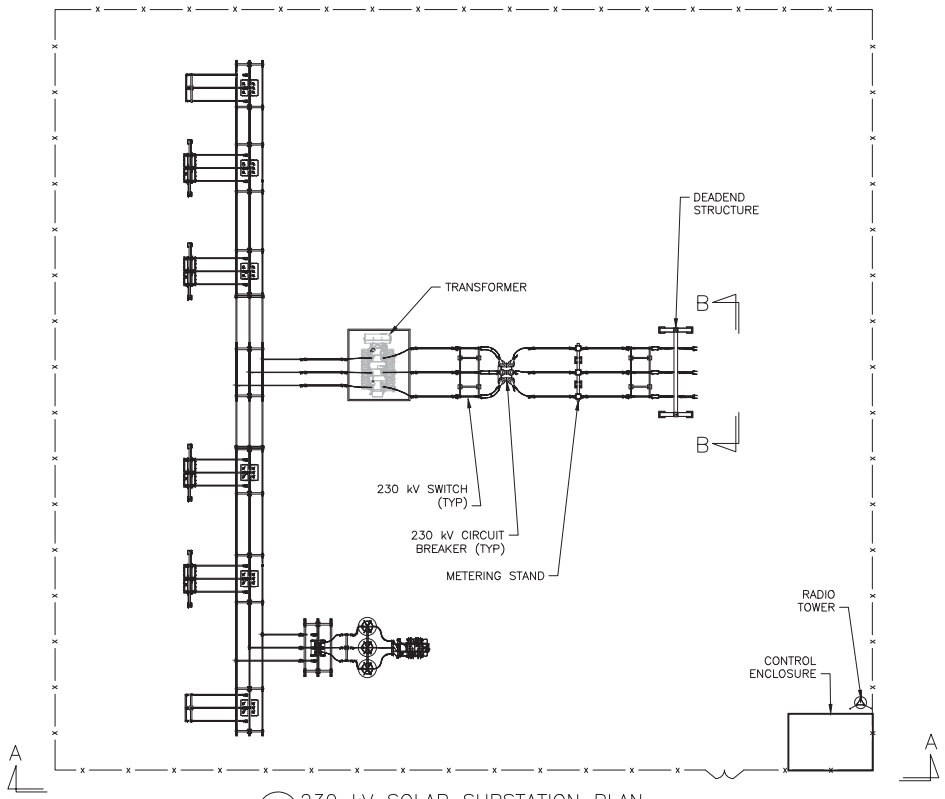
2.5.1.2 Project Substation

The proposed on-site substation would be the termination point of the collection system for 34.5 kV electricity generated from the Project's solar arrays. The purpose of the substation is to step up the voltage of the generated power to match the interconnection voltage through the use of a step-up transformer. The Project substation would be constructed at a location approximately as depicted on Figure 2-2, *Site Plan*. The substation would include equipment such as protective relays (switching or sensing devices) and circuit breakers (isolating or disconnecting devices) that protect the grid from power system disturbances, either internal or external to the Project. As shown in **Figure 2-3**, *Project Substation Plan*, substation equipment would include a control building (approximately 100-feet long, 60-feet wide, and 20-feet tall at the roof's apex), transformers, circuit breakers, overhead switches, and "dead-end" structures, which are where conductors and ground wires are pulled to terminate only on one side. The internal base of the substation would consist of crushed aggregate, and the substation would be secured with a 6- to 10-foot high chain link fence or game fence (in compliance with electrical codes) topped with triple strand barbed wire.

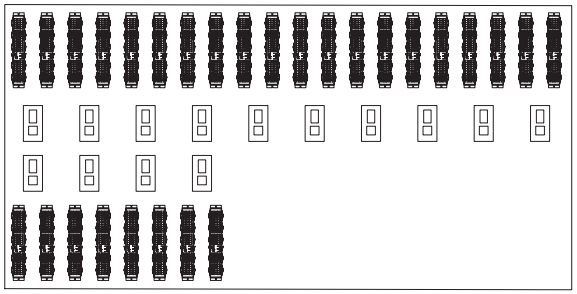
2.5.1.3 Energy Storage System

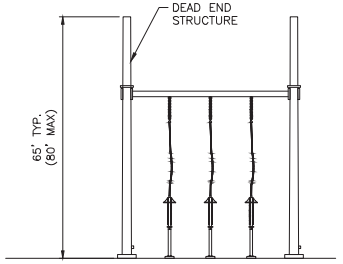
The Project would include a lithium ion or a flow battery energy storage system (ESS) that would be either AC-coupled or DC-coupled. For an AC-coupled ESS, the storage facility would be centralized near the Project substation and the solar and ESS would have independent power inverters, medium voltage (MV) transformers, and MV collection circuits. The inverters would directly convert DC to AC in a single stage. The 34.5 kV collection system would be either overhead or underground. For a DC-coupled ESS, the batteries would be distributed throughout the solar arrays and connect to multiple solar inverters, MV transformers, and MV collection circuits. Past the Project substation, downstream use of the gen-tie and point of interconnection facilities would be shared by both the solar and the ESS. Regardless of whether an AC- or DC-coupled system is developed, the batteries would be physically arranged in temperature-controlled enclosures (e.g., a structure, container boxes, or trailers).

The enclosures would be equipped with all necessary ancillary equipment including appropriate heating, ventilation, and air conditioning (HVAC) equipment, fire suppression systems, and other electrical control units. The enclosures would have a maximum height of 25 feet. The proposed ESS would be designed, constructed, operated, and maintained in accordance with existing federal, state, and local regulations for health and safety, including Section 1207 of the 2022 California Fire Code, which contains requirements for electrical energy storage systems. Given continuing rapid technological change in the battery industry, the Applicant would make a final selection as to batteries or ESS providers as part of the final design process.

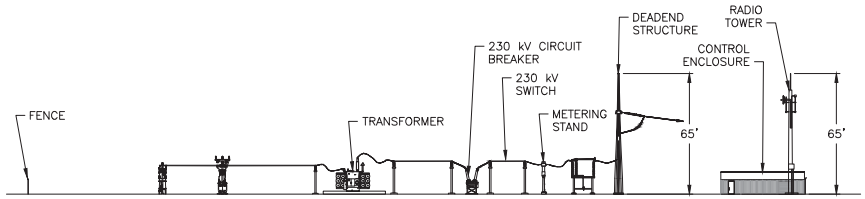


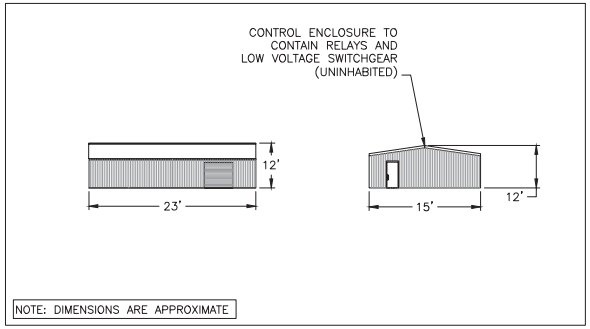
1 230 kV SOLAR SUBSTATION PLAN
SCALE: NTS





3 ELEVATION B–B
SCALE: NTS





4 CONTROL ENCLOSURE ELEVATIONS
SCALE: NTS

SOURCE: EDPR, 2020

EDP Renewables Sonrisa Solar Project

Figure 2-3
Project Substation Plan

ESA

2.5.1.4 Other Infrastructure

Operation and Maintenance Building

The Operations and Maintenance (O&M) building would be constructed in a location as approximately depicted on Figure 2-2, *Site Plan*. The O&M building would be approximately 100-feet long, 60-feet wide, and up to 35-feet tall at the roof's apex, as shown on **Figure 2-4**, *O&M Building Standard Floor Plan*. It would include offices, a crew area, restrooms, mechanical rooms, a break room/kitchen, communications closets, warehouse space, and tool storage. It would also be equipped with an HVAC system. Parking will be provided consistent with County requirements.

Onsite Well

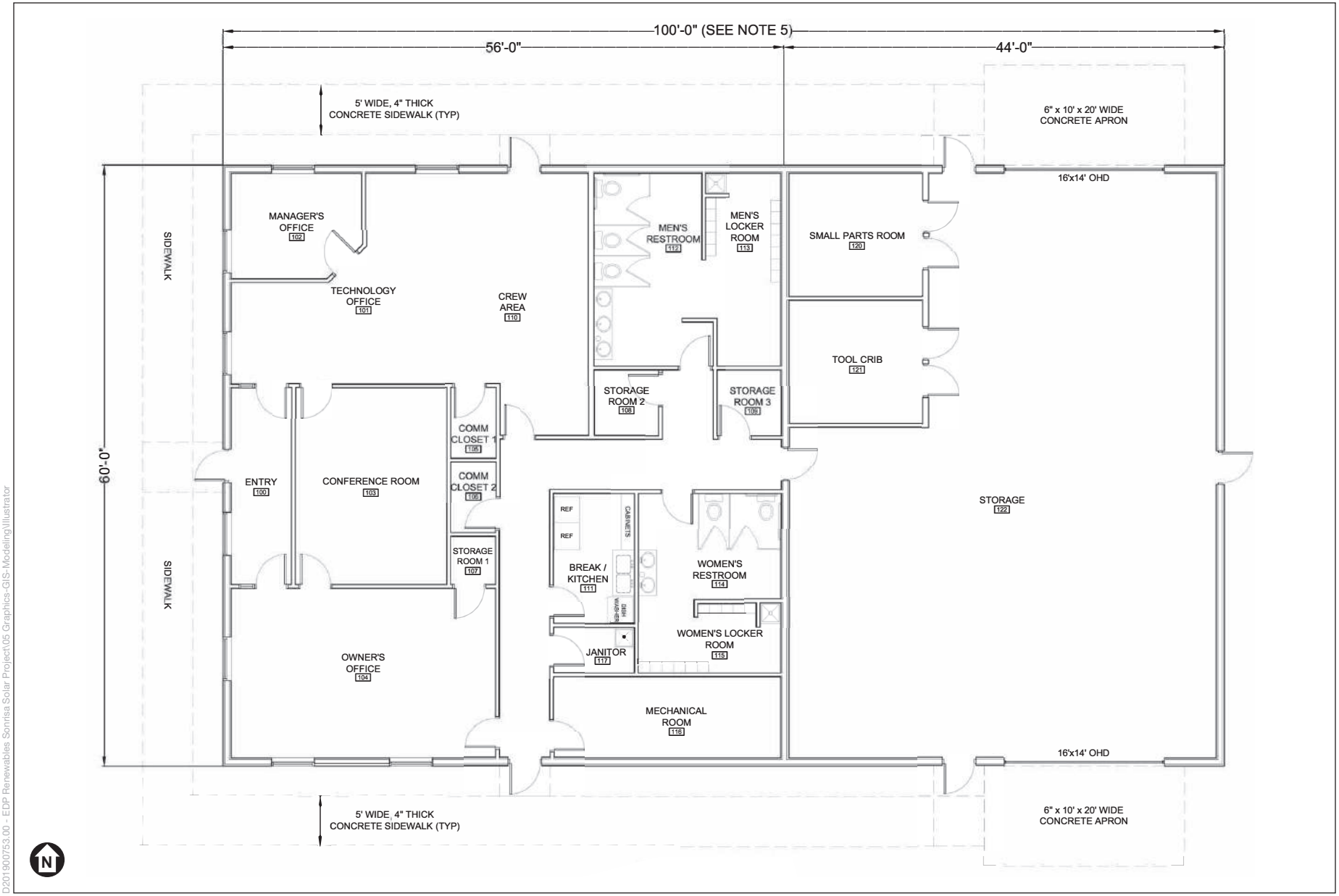
A new groundwater well could be drilled within the Project site, currently anticipated to be near the center of the site. The well would provide water for on-site use during construction, primarily for dust suppression. The well would be sized to provide approximately 300 acre-feet (AF) of groundwater during the approximately 12- to 14-month construction period. Following construction, water from the groundwater well would be treated for potable use by employees working out of the O&M building during normal business hours, and would also be used approximately every four years for solar panel washing. These operations will require a combined total water use of 2 acre-feet per year (AFY). The Project's Water Supply Assessment, including a 2023 update to describe the proposed groundwater well, is provided as Appendix C.

Septic System and Leach Field

A septic system and leach field would be installed adjacent to the O&M building to support the restroom facilities and sewage needs at the O&M building during operation. Wastewater from the building would be discharged into the septic tank for a minimum detention period of 24 hours, where most of the solids would be removed. The septic tank would be 1,500 gallons and designed, constructed, and operated according to the Fresno County requirements (see, e.g., Fresno County, 2018).

Stormwater Retention

The Project has been designed such that site drainage would follow the pre-Project drainage patterns. The Project site is flat (with slopes of 0 to 1 percent) and none of the Project facilities, including fences and panel posts, would obstruct stormwater flow. No on-site detention facilities are currently planned; however, if deemed necessary based on preconstruction drainage analysis and local grading requirements, the Project may include on-site detention or retention basins to retain stormwater runoff. Such basins would be expected to remain dry except during or just after a rain event.



D201900753.00 - EDP Renewables Sonrisa Solar Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: EDPR, 2020

EDP Renewables Sonrisa Solar Project

Figure 2-4
O & M Building Standard Floor Plan

ESA

Supervisory Control and Data Acquisition System (SCADA)

The proposed solar facility would include a comprehensive SCADA system to allow remote monitoring of facility operation and/or remote control of critical components. Fiber optic or other necessary cabling would be installed in underground conduits. The dimensions of the system cabinets would be approximately 20 feet by 8 feet by 9 feet above the ground surface. The Project's SCADA system would interconnect to the existing communications network at the Tranquillity Switching Station.

Meteorological Data Collection System

The Project would require up to two free-standing meteorological data collection systems (each up to 15 feet tall) to track weather conditions for solar collection, including solar irradiance, air temperature, air pressure, and wind speed and direction. This system or systems may be mounted at various locations throughout the facility. The meteorological data would be collected at the height level of the solar panels, or approximately 10 feet above ground level.

Telecommunications Facilities

The Project would require connection with the existing local telecommunication service. A telecommunication line would be comprised of fiber optic cable and/or 25-pair telephone line, which would be either attached to existing distribution lines or installed below ground. The point of interconnection to the existing telecommunications facilities would be in a small telephone/ fiber optic vault located within the Project substation footprint. Below ground installations usually are installed 24−48 inches below grade.

Fencing, Lighting, and Signage

The solar facility would be secured with (6- to 10-foot high) chain-link or game fencing along the perimeter of the Project site that is raised off the ground to permit passage by kit fox and smaller mammals. One additional foot of three-strand concertina wire may also be added to the top of the perimeter fence. The substation would be surrounded by an 8-foot-tall, chain-link fence topped with barbed wire, or a game fence to comply with electrical codes.

Infrared security cameras, motion detectors, and/or similar technology may be installed to allow for monitoring of the Project site through review of live, 24/7 footage. A security company also may be contracted by the Applicant for security purposes during construction and operation. Should the security system detect the presence of unauthorized personnel, a security representative would be dispatched to the site, and appropriate local authorities would be notified.

Project lighting would be installed within the control building, within the O&M building, and otherwise as needed for maintenance and security. Low-level lighting may be installed at entry and egress gates and at other strategic locations around the facility. Manually controlled lights would be installed at equipment pads and substations. All exterior lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties, in conformance with applicable Fresno County requirements for outdoor lighting.

Project signage is proposed to identify the Project owner and for safety and security purposes. Signage is proposed to be installed on the fence or ground-mounted in the vicinity of the main entry gates. Signage would identify the Project operator and owner and would provide emergency contact information. Small-scale signage would also be posted at the main entry gates and intermittently along the perimeter fence on all exterior parcel boundaries, to indicate "No Trespassing" and "Private Property" for security purposes. All signage would conform to Fresno County signage requirements. No landscaping is proposed.

Access and Circulation

Primary site access (ingress and egress) would be on West Manning via SR 33, with secondary access via West Adams Avenue. Access gates would be provided at each site entry. A perimeter road inside the fence line would be 20-feet wide. Existing interior roads would be improved for site circulation to be up to 15-feet wide with a minimum of 3 feet of clearance on either side. Crushed aggregate base or other native material would be placed on interior access roadways with soil stabilization material, as necessary, to minimize fugitive dust and for ease of maintenance.

2.5.2 Gen-Tie Line and Interconnection

Energy from the Project solar arrays would be collected at the Project substation and transmitted through an existing 230 kV gen-tie line, allowing for 100-foot setbacks from Project solar facility structures. The gen-tie line would require an up to 0.2-mile extension to connect the Project's proposed substation to the existing 230 kV gen-tie line connecting to the PG&E-owned Tranquillity Switching Station. The gen-tie line extension would consist of one or two single-circuit structures, consisting of up to six approximately 150-foot-tall wood, concrete, or steel poles.

2.5.3 PG&E Infrastructure

To accommodate the Project, PG&E would extend an existing 230 kV gen-tie line by up to 0.2-miles to connect with the Project's proposed substation. A utility easement would be required for Project use of the gen-tie line as shown on Figure ES-2. Construction, operation, and maintenance of the existing 230 kV gen-tie line (proposed for Project use) was analyzed as part of the Scarlet Solar EIR (SCH No. 2018091022), and this analysis is incorporated herein by reference (Fresno County, 2021).

2.5.4 Water, Waste, Power, and Hazardous Materials

2.5.4.1 Water and Wastewater

Water

Construction

Construction water requirements would consist of non-potable water for dust suppression and other purposes and could be provided by a new onsite well or existing on-site water infrastructure (Appendix C). The Project would require up to 300 AF during the approximately 12- to 14-month construction period. If the well is not installed, WWD has provided the Applicant with an annual

allocation of 2 AF per each 320 acres of acquired land. During the construction phase of the Project, an additional allocation of 150 AFY per 320 acres of acquired land is permitted (Appendix C). Potable water for use by construction staff would be provided by the construction contractor and delivered by truck to the site.

Operation and Maintenance

The Project's water requirements during the operations and maintenance phase are estimated to be up to 2 AFY. Water for the proposed O&M building would be obtained through a groundwater well to be installed by the Applicant, existing on-site water infrastructure, or imported/delivered from off-site. Potable water for the O&M staff would be delivered or conveyed through waterlines from a well, which could be dug within the Project site. Well water treatment would likely include selenium removal through reverse osmosis or ion exchange filtration. In the event that a well is not installed, de-ionized water required for panel washing would be transported to the site in water trucks, once every four years. The amount of water used for this purpose is not expected to exceed the underlying soil's ability to absorb it. It is anticipated that up to five 5,000-gallon water trucks would be required for panel washing every four years.

Decommissioning

Decommissioning and site reclamation is estimated to require temporary use of non-potable water resources, primarily for dust control purposes.

Wastewater

Wastewater would consist of septic waste, which would be contained in an on-site subsurface septic tank, which would be periodically pumped out. The pumped waste would be trucked off site and disposed of through a local wastewater treatment provider.

2.5.4.2 Solid Waste

Solid waste generated during construction would be likely to consist of cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools. The majority of waste generated during demolition and construction would be non-hazardous. Potential hazardous wastes are discussed in Section 2.5.4.4, *Hazardous Waste and Hazardous Materials*. Construction waste materials such as metal and wood would be separated from the waste stream and recycled whenever feasible. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site. Dumpsters would be collected as needed by a commercial service and delivered to a landfill such as the American Avenue Landfill. Construction would generate an average of approximately 20 cubic yards of solid waste per week over the period of construction.

The facility is anticipated to generate approximately one cubic yard of solid waste per week through maintenance and operation activities. Such waste would be likely to consist of rusted metal, defective PV modules, miscellaneous electrical hardware, empty supply containers, and food waste from items consumed by O&M staff.

Waste generated during decommissioning and site reclamation would be similar to that described for construction activities and is expected to consist mainly of non-hazardous substances and materials. To the extent possible, materials dismantled during decommissioning would be recycled or sold as salvage. Decommissioning activity is described in additional detail in Section 2.5.7.

2.5.4.3 Power

Electricity would be required during construction (e.g., for security lighting), operation and maintenance (e.g., for lighting and to power HVAC equipment), and decommissioning. Temporary power for construction would be supplied by mobile diesel-driven generator sets, batteries, temporary electrical service from a local provider, or a combination of all three methods. During O&M, electricity to serve the Project would be provided via a connection to the on-site station service transformer with connection lines installed above and/or below ground.

2.5.4.4 Hazardous Waste and Hazardous Materials

The Project's construction, operation, and decommissioning activities may involve the transportation, use, or temporary storage of a variety of hazardous materials in the normal course of work. Hazardous substances present on the Project site may include chipped or broken solar panels, batteries, insulating fluid, grease, solvents, and other cleaning products.

The PV solar panels proposed for this Project would be inspected before installation and, once installed, would be inspected and maintained in accordance with the manufacturer's specifications. Lithium ion batteries such as those proposed as part of the energy storage system are generally safe and unlikely to fail, provided there are no defects and the batteries are not damaged. The batteries proposed as part of this Project would be contained in temperature-controlled facilities or enclosures. If flow batteries are utilized, these battery systems are non-flammable and designed to trigger a shut-down mechanism if safe operating parameters are exceeded (Energy Response Solutions, 2017). Electrical equipment used by the Project, such as inverters and transformers, typically contain dielectric insulating fluid, which would be formulated from either vegetable or mineral oil. If equipment leaks mineral oil, it can potentially start a fire. However, the insulating fluids that would be necessary for this Project would be contained in the equipment and not routinely handled by O&M staff. Tracker motors and drive supports could require periodic application of synthetic industrial grease at the interface of moving parts. Depending on the formulation, grease is considered hazardous by the Occupational Safety and Health Administration (OSHA). Furthermore, during construction, diesel fuel and gasoline may be stored on-site for refueling equipment and vehicles. If spilled or not properly contained, these materials are highly flammable and pose a serious fire hazard. However, for this Project, diesel fuel and gasoline would be stored and handled in a manner to prevent accidental release, consistent with regulatory requirements. Cleaning products typical of office spaces also may be used in the O&M building. Standard construction practices would be observed to minimize and contain incidental releases and allow for appropriate remediation, as applicable.

All hazardous materials would be used, stored, and disposed of in accordance with the manufacturers' specifications and consistent with OSHA, its state equivalent (Cal/OSHA) and other applicable regulatory requirements. Workers would be trained to engage in safe work practices and to properly identify and handle any hazardous materials on-site.

Chipped or broken solar panels and batteries may be considered hazardous waste in California when they are discarded. Accordingly, any such materials would be disposed of in accordance with the applicable hazardous waste requirements.

2.6 Construction

Project construction would consist of two major phases: grading and site preparation followed by aboveground facility construction, including component assembly and electrical interconnection.

2.6.1 Grading and Site Preparation

To prepare the site for construction, grubbing and grading would take place to achieve the required ground surface conditions. Site preparation may include application of pre-emergent herbicides formulated to minimize impacts on wildlife. Application would occur in accordance with federal, state, and county regulations and would be applied by a state-licensed pesticide applicator. Due to the flat topography of the site, grading requirements would be minimal. Roads and other work areas would be periodically sprayed with water to reduce dust. Roads and work areas may also be treated with approved dust-suppression products. Any cut and fill would be balanced on-site, and no importing or exporting of soil is anticipated to be required.

2.7 Temporary Construction Facilities and Staging Areas

Following grading, aggregate would be installed on road surfaces and temporary fencing would be installed around the Project site to allow for materials and equipment to be securely stored. To prevent theft and vandalism, materials would be secured within fenced areas at all times. A storage container (roughly the size of a boxcar) may be used to house tools and other construction equipment. In addition, security guards would regularly monitor the site. Portable toilet facilities would be placed on-site for use by construction workers. Waste disposal would occur through a permitted off-site facility.

2.7.1 Solar Facility Construction and Installation

Construction activities associated with installation of the solar arrays would involve the following:

a) Installation of overhead, aboveground, or underground cable;

b) Installation of the racking system, which would be supported, when practical, by driven steel piers (piles) directly embedded into the ground, and PV modules;

c) Installation of concrete pads or precast vaults for electrical equipment;

d) Installation of electrical equipment on skids, within shelters, or on engineered piles;

e) Installation of collection system poles and lines; and

f) Concrete as needed for the footings, foundations, pads for the transformers, substation equipment, and the O&M building. Final concrete specifications would be determined during detailed design engineering in accordance with applicable building codes. Concrete would be delivered to the site by truck.

2.7.1.1 Substation Construction

The substation would be fenced for safety and to secure the medium- and high-voltage electrical equipment. Initial activity would include excavation and grading of the substation area. The area would be backfilled, compacted, and leveled, and then aggregate rock base would be applied. A copper grounding grid would be installed, and then foundations for transformers and metal structures would be poured. Equipment including transformers, breakers, bus-work, and metal dead-end structures would be installed and connected upon foundations. The transformers require (contained) insulating oil for operation. The substations would have a site control center equipment building which would house substation and plant control equipment, meters, battery or generator backup and other electrical equipment. The site control center equipment building would be located in or next to the substation.

2.7.2 Battery Storage System

Batteries operate with DC electricity that must be converted to AC for compatibility with the existing electric grid. The enclosures housing bi-directional inverters to convert between AC and DC would be located outside the structures along with transformers that would step up the voltage. The controllers ensure that the ESS effectively responds to grid emergency conditions and provides a secondary safety system designed to safely shut down the facility.

Two options for battery ESS are being considered. Centrally housed AC systems would include storage container structures (similar in size and shape to a boxcar) which would be placed either on concrete foundations or on an aggregate base. DC-coupled systems would be paired with inverters (installed on foundations or aggregate base) and distributed throughout the solar facility. Construction of the Project's ESS (whether AC-coupled or DC distributed) would occur in a manner consistent with California Building Code standards and design specifications, pursuant to Section 1207 of the California Fire Code (as updated in 2012) pertaining to electric energy storage systems/public health and safety standards.

2.7.3 Gen-Tie Line and Interconnection

An up to 0.2-mile long 230 kV gen-tie line extension would be constructed between the Project substation and the existing (or approved) approximately 3.3-mile gen-tie line serving the Scarlet Solar project, to reach the point of interconnection at PG&E's existing Tranquillity Switching

Station. Construction of this extension would generally consist of the installation of the approximately 6 poles, line stringing, connection to existing infrastructure, and testing.

2.7.4 Construction Schedule and Workforce

Construction of the Project would occur in multiple phases and require approximately 12-14 months to complete.

2.7.4.1 Hours

Construction is anticipated to take place from Monday through Friday, during the hours of 7 a.m. to 10 p.m. If overnight work (10 p.m. to 7 a.m.) or work on weekends is deemed necessary (for example, to make up schedule deficiencies, complete critical construction activities, or avoid dangerous work conditions during hot weather), such work would occur consistent with Fresno County General Plan and County code provisions. Construction could require some overnight activity for delivery of components, installation, service or electrical connection, inspection, and testing activities. Overnight activities would be performed with temporary lighting, which would be directed downward to minimize impacts to neighboring properties and wildlife in the Project vicinity.

2.7.4.2 Workforce

The construction workforce would consist of skilled and unskilled laborers, supervisors, and management personnel. Consistent with the County of Fresno Solar Facility Guidelines (Fresno County, 2017), all reasonable efforts would be made to conduct local recruitment efforts and/or to coordinate with employment agencies to hire from the local workforce. Up to 350 full-time workers may be required during the peak of construction and decommissioning (Appendix K) and up to seven full-time workers may be required during operations.

2.7.5 Construction Access, Traffic, and Equipment

The Project site can be accessed from West Manning Avenue (along the southern Project site boundary) and from West Adams Avenue (along the northern boundary). The proposed perimeter road and existing interior access roads would be improved with the addition of an aggregate base or other native material and soil stabilization material, if necessary. The areas surrounding the inverters and switchgear would be graveled.

Any traffic resulting from construction activities would be temporary (i.e., up to 14 months) and would occur along area roadways as workers and materials are transported to and from the Project site, or as delivery trucks slow to enter or pick up speed as they exit the project site. The majority of construction workers would be expected to arrive at the Project site in the morning and depart during the afternoon each weekday. Construction workers may be encouraged to carpool in order to minimize vehicle trips, pending public health considerations in effect at the time of construction.

Typical equipment during construction would include scrapers, dozers, tractors, backhoes, excavators, and other common types of construction vehicles and equipment. The peak construction phase would temporarily generate approximately 1,027[6] truck trips per day (351 morning peak hour trips and 351 evening peak hour trips) (Appendix K).

Scheduled operation and maintenance activities are expected to generate minimal traffic, consistent with the anticipated up to 7 full-time O&M employees. O&M vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and module washing. Large or heavy equipment would not be needed during normal operation, although such equipment may be brought to the site infrequently for equipment repair or replacement.

2.7.6 Stormwater and Dust Control

As described previously, the Project would use water for dust control during construction, operation and maintenance, and decommissioning activities. Such water would be applied in an amount and manner that would not exceed site soil absorption capabilities and would be controlled to avoid runoff. If deemed necessary based on preconstruction drainage analysis and local grading requirements, the Project may include on-site detention or retention basins that would serve to retain stormwater runoff. Such basins would be expected to remain dry except during or after a rain event.

2.8 Operation and Maintenance

Once constructed, the Project would operate continuously seven days a week throughout the year. The facility would be operated and maintained by the Applicant or through an affiliated company. Approximately 7 permanent on-site staff would be present during normal business hours (unless otherwise required) to operate, maintain, and/or monitor the site. Remote monitoring of the site may also occur, which would be performed (after hours) through a security company, contracted with the Applicant. On a typical day, the number of workers on site may range from none (it is not necessary for staff to be present during plant operations) to 30 during periodic, routine maintenance events. Intermittent additional support personnel may include between 5 and 30 workers to perform maintenance activities (such as panel washing) and occasional facility repairs, as needed. Non-routine (emergency) maintenance could require additional workers.

2.8.1 Decommissioning and Site Reclamation

Within the roughly 12-month timeframe immediately preceding expiration of the requested 35-year use permit for the Project, the site would be decommissioned, reclaimed, and restored in accordance with a County-approved Reclamation Plan, a draft of which is provided in Appendix B-1, *Project Site Reclamation Plan*. Simply put, the site would be returned to a condition comparable to that prior to construction.[7] Reclamation would consist of the removal of

6 Passenger car equivalent.

7 Alternatively, consistent with the County's Solar Facility Guidelines (Fresno County 2017), the Applicant could seek a new land use permit to extend Project operations.

all aboveground structures and the majority of all belowground structures (including foundations and infrastructure), and overall restoration of the site.

Aboveground structures such as solar PV modules, racking systems, batteries, and enclosures would be dismantled and prepared for either resale, recycling, or disposal in a manner consistent with applicable regulations in effect at the time of decommissioning, and ultimately removed from the site. Mounting systems would be dismantled and components recycled to the extent possible. Fencing and gates would be removed and all materials recycled to the extent possible. Electrical systems and electric lines external to the site would be de-energized and prepared for salvage. Concrete pads that support inverters and transformers would be removed and the useful materials recycled and debris removed.

Following removal of above-grade equipment and structures, sub-surface structures would be decommissioned. The majority of the underground electrical equipment would be extracted and removed from the site, however, electrical conduit and other materials that are installed more than 3 feet below the ground surface would be decommissioned in accordance with County requirements. Piles (supporting solar racking) would be extracted vertically using machinery capable of individual removal. Copper or aluminum wire insulated in plastic material is a recyclable commodity and as such, could be sold for salvage value or recycled.

The site reclamation process would include removal of all Project roads, access roads, and parking areas, unless retained for other purposes following decommissioning. The process generally requires removal of the granular (or graveled) road base using a wheel loader to strip off the material. Dump trucks would be utilized to haul this debris to an approved recycling or disposal facility. If the underlying soil exhibits compaction, the soil may be disked to aerate the soil to allow the ground to return to a condition similar to pre-Project construction. If necessary, fresh topsoil may be imported to the reclamation site by truck and distributed over the area before being levelled to match the existing (pre-Project) grade. Revegetation would consist of either broadcast distribution or sowing of a mix of rangeland seed across the site, as specified by local authorities at the time of decommissioning.

2.9 Applicant Proposed Measures and Design Features

The Project is designed to be sited upon lands under a non-irrigation covenant, thus conserving groundwater resources for active agricultural lands.

2.9.1 Erosion Control and Water Quality

The Project would implement best management practices (BMPs) to limit runoff and control erosion during construction, as required, and in compliance with the terms stipulated by a stormwater pollution prevention plan (SWPPP) and associated conditions of the Construction General Permit (if applicable). In the absence of a nexus with waters of the United States, the Project would limit runoff and control erosion compliance with the terms of a plan that incorporates stormwater BMPs that are substantively similar to what would be required by a

SWPPP to reduce the adverse effects of erosion and sedimentation. Similarly, the Project may require preparation of a Spill Prevention, Control, and Countermeasures (SPCC) Plan under 40 CFR §112.1. If a SPCC Plan is not required by regulation, the Project would prepare and adhere to a substantively similar plan.

2.9.2 Solar Technology – Glare and Lighting

The Project would use solar panels that have a low profile (no more than 9 feet high at the highest point during the day) to minimize visual impacts. Solar panels are designed to be anti-reflective. Nighttime exterior lighting impacts would be minimized by the use of manually controlled lights. All exterior lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties.

2.9.3 Pest Control

The Applicant is proposing to implement an Integrated Pest Management Plan to prevent noxious weeds from invading onto immediately adjacent agricultural lands, protect special status and other biological resources surrounding the Project site from the potential for harmful effects of noxious weeds that could result from Project activities, avoid unintended harm from noxious weed management techniques, and manage potential pest populations. A plan for noxious weed control is provided in Appendix B-2, *Weed Control Plan*. A plan for rodent control is provided in Appendix B-3, *Rodent Control Plan*.

2.9.4 Compliance with Applicable Laws and Standards

The Applicant would comply with all applicable laws and standards, including, but not limited to, those governing the use, storage, and disposal of hazardous materials; worker training and safe work practices; air quality (such as the San Joaquin Valley Air Pollution Control District's indirect source rule and fugitive dust regulation); water quality; and energy storage systems more generally. Compliance with these requirements would avoid or reduce potential adverse environmental impacts to soil, air quality, surface water and groundwater quality, human health, fire-related risk, and other environmental considerations.

2.9.5 Compliance with Recommendations Made in Project-specific, Site-specific Technical Studies

The Applicant has commissioned, and the County has independently reviewed, the resource-specific technical studies provided in Appendices C (Water Supply Assessment and Evaluation), D (Agricultural Resources), E (Air Quality and Greenhouse Gas Emission), F (Biological Resources), G (Geology, Soils, and Paleontological Resources), J (Noise), and K (Transportation). To the extent these studies make specific recommendations, the implementation of which would reduce potential impacts to the physical environment, the Applicant has committed to implementing them as part of the Project.

2.10 Permits and Approvals

The following jurisdictional permits and approvals are anticipated to be required for the Project:

- Fresno County, Department of Public Works and Planning: Unclassified Conditional Use Permit (CUP) to allow development and construction of a solar facility on lands within an AE-20 zone district[8];
- Fresno County, Department of Public Works and Planning: Variance for structures exceeding 35 feet in height;
- Fresno County, Department of Transportation and Public Works and Planning: Vacation of street easements;
- Fresno County: Construction, grading, and building permits, encroachment permit;
- Central Valley Regional Water Quality Control Board: Notice of Intent to comply with National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharge Associated with Construction Activity (Construction General Permit) if construction activities implicate waters of the United States;
- Central Valley Regional Water Quality Control Board authorization may be required under the Wast Discharge Requirements Program if the Project will result in discharges into waters of the state.
- California Department of Transportation (Caltrans): Encroachment permit and permit for transportation of oversized loads;
- San Joaquin Valley Air Pollution Control District: Authority to Construct/Permit to Operate; approval of stationary and/or mobile sources of air pollution may be required;
- PG&E utility easement for shared use of a 230 kV transmission line.

2.10.1 References

EDP Renewables CA Solar Park VI, LLC, 2020. Sonrisa Solar Park Conditional Use Permit Application 3677. Section 6, Project Description. Submitted to Fresno County May 21, 2020.

[8] The County processes PV solar facility projects through the CUP process for public utility and public services, structures, uses and buildings, as described in Code Section 853.B.14 (Fresno County 2018b). By contrast, County Zoning Ordinance Code Section 816.2.D identifies electrical transmission substations and electric distribution substations as uses permitted subject to Director Review and Approval (DRA) (Fresno County 2018a). Where (as here) a project is subject to two or more separate use permits, the County evaluates the entire project under the more-intensive process. Since the CUP process is more intensive than the DRA process, the County is reviewing the proposed substation as part of the CUP process for the larger facility. Thus, the substation proposed as part of the Project does not require a separate DRA.

Energy Response Solutions, 2017. Energy Storage System Safety: Comparing Vanadium Redox Flow and Lithium-Ion Based Systems. Available: http://energyresponsesolutions.com/wp-content/uploads/VRB_SafetyReport.pdf. Accessed October 5, 2022.

Fresno County Department of Public Works and Planning, 2017. Solar Facility Guidelines Revised by the Board of Supervisors December 12, 2017. Available: https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities-p-1621. Accessed October 21, 2020.

Fresno County Department of Public Works and Planning, 2018. Onsite Wastewater Treatment Systems Guidance Manual. Available: https://www.co.fresno.ca.us/home/showdocument?id=26349. January 2018.

Fresno County Department of Public Works and Planning, 2021. Scarlet Solar Energy Project Draft Environmental Impact Report No. 7230 SCH No. 2018091022. Available: https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-and-capital-projects/planning-and-land-use/environmental-impact-reports/scarlet-solar. Accessed April 17, 2023.

CHAPTER 3
Alternatives

CEQA requires a lead agency to analyze a reasonable range of alternatives to a proposed project that could feasibly attain most of the basic objectives of the project while substantially reducing or eliminating significant environmental effects. CEQA also requires an EIR to evaluate a "no project" alternative to allow decision-makers to compare impacts of approving a project with the impacts of not approving it. This chapter describes the key considerations used to screen potential alternatives, explains why some potential alternatives were eliminated from further consideration, and describes those alternatives that were carried forward for analysis.

3.1 Alternatives Development and Screening Process

The County screened and thereafter selected alternatives to be discussed based on the following key provisions of the CEQA Guidelines (14 Cal. Code Regs. §15126.6):

- The discussion of alternatives shall focus on reasonable, feasible alternatives to the proposed project or its location that are capable of avoiding or substantially lessening any significant effects of the proposed project, even if these alternatives would impede to some degree the attainment of the proposed project objectives, or would be costlier.
- The No Project Alternative shall be evaluated, along with its impacts. The no project analysis shall discuss the existing conditions at the time the notice of preparation was 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.
- The range of alternatives required in an EIR is governed by a "rule of reason," meaning the EIR must evaluate only those alternatives necessary to permit a reasoned choice.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives are "site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (CEQA Guidelines §15126.6[f][1])).

Among the factors that may be considered in determining not to carry a potential alternative forward for more detailed consideration in an EIR are:

a. Whether the alternative would meet most of the basic project objectives. The project objectives identified in Section 2.4, *Project Objectives*, are repeated here for ease in reference:

    1. Fulfill the Applicant's executed large generator interconnection agreement for 200 MW solar PV;

    2. Provide an energy storage system with 184 MW_{AC} battery storage capacity;

    3. Develop a site which is proximate to existing transmission infrastructure to minimize environmental impacts;

    4. Reduce environmental impacts by using contiguous lands located near existing solar projects;

    5. Support California and Fresno County goals of protecting farmland and conserving groundwater through appropriate siting of the Project upon lands under a "non-irrigation covenant";

    6. Increase local short-term and long-term employment opportunities and provide economic benefits to Fresno County;

    7. Support the generation of renewable energy in the State of California per the objectives outlined in SB 100 (2018, De León);

    8. Provide the California Community Choice Aggregators (CCA) with zero-emissions renewable energy to support the goal of providing clean energy to CCA customers using established solar and energy storage technology in an economically feasible manner; and

    9. Generate clean, reliable electricity and provide long-term property tax revenue that would support public services and create jobs within Fresno County and in California.

b. Whether it would be "feasible," where feasible means capable of being accomplished in a successful manner within a reasonable period of time, considering economic, environmental, legal, social, and technological factors (Pub. Res. Code §21061.1; CEQA Guidelines §§15126.6, 15364). Any alternative determined to be infeasible was not carried forward for more detailed review.

c. Whether it would be able to avoid or substantially lessen any of the potentially significant impacts of the Project. As indicated in Section ES.6.3 in the Executive Summary, the Project would cause no significant and unavoidable impacts. As indicated in Section ES.6.5 and as analyzed on a resource-by-resource basis throughout Chapter 4, *Environmental Analysis*, the Project would result in the potential significant impacts summarized in **Table 3-1**, *Summary Potential Significant Environmental Impacts*. Each of these potential significant impacts could be reduced to a less-than-significant level with the implementation of one or more mitigation measures.

d. Whether its implementation is remote or speculative. Any alternative determined to be remote or speculative was not carried forward for more detailed review.

TABLE 3-1
SUMMARY POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS

Issue Area	Impact
Biological Resources	• Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species, including San Joaquin kit fox; Swainson's hawk and other raptors; burrowing owl; special-status or migratory bird species, including loggerhead shrike; and tree-roosting bats (criterion a) • Construction could conflict with Fresno County General Plan Goal OS-E, which protects wildlife habitat such as for San Joaquin kit fox; burrowing owl and other raptors, including Swainson's hawk; and migratory birds, including loggerhead shrike (criterion e)
Cultural and Tribal Cultural Resources	• Ground disturbing activities associated with the Project could cause a substantial adverse change in the significance of a newly-discovered historical or archaeological resource, as defined in CEQA Guidelines Section 15064.5 (criteria a and b) • Ground disturbing activities associated with the Project could result in damage to previously unidentified human remains (criterion c) • Ground disturbing activities could cause a substantial adverse change to previously unknown archaeological resources that are also tribal cultural resources, as defined in Public Resources Code Section 21074(a) (criteria d.1 and d.ii)
Geology, Soils, and Paleontological Resources	• The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, the location of which is not currently known (criterion f)
Noise	• Project construction could generate a substantial temporary or permanent increase in ambient noise levels near the Project site in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies (criterion a)
Transportation	• Project construction would generate a temporary increase in traffic volumes on area roadways, which could conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (criterion a)

CEQA also makes clear that an EIR must include "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Project" (14 Cal. Code Regs. §15126.6[d]). This EIR initially considered five alternatives to the Project, of which two were carried forward for more detailed consideration: Alternative 1, *Reduced Acreage Alternative*, which is described in Section 3.3.1, and the No Project Alternative, which is described in Section 3.3.2.

3.2 Alternatives Rejected from Detailed Consideration

As noted above, potential alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (14 Cal. Code Regs. §15126.6(c)). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not require consideration (14 Cal. Code Regs. §15126(f)(2)). The County considered several potential alternatives to determine whether they could reduce impacts to the considerations identified in Table 3-1. Per CEQA, the lead agency may make an initial determination as to which alternatives are feasible and warrant further consideration and which are infeasible. The following potential alternatives initially were considered but then eliminated from further consideration. Each potential alternative is discussed below, including the rationale for not carrying it forward for more detailed environmental review.

3.2.1 Other Impaired Agricultural Lands

The Project site consists of disturbed agricultural land designated as Agriculture in the Fresno County General Plan, and is zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size). It is dry-farmed for rangeland grasses or lays fallow. The County initially considered whether an alternative site on different impaired agricultural lands could meet the screening criteria. For the reasons summarized below, the County determined not to carry an "Other Impaired Agricultural Lands" alternative forward for detailed review in the EIR.

The Project site is poorly-suited for productive, sustainable agriculture and well-suited for solar development for following reasons:

- The Project site is degraded, poorly-drained farmland that is subject to restrictive covenants prohibiting the use of irrigation water on the property. It is not subject to a Williamson Act contract, and is not designated as Prime or another category of special-status farmland. Sites with these characteristics have been identified by an agricultural farmland stakeholder group consisting of the Westlands Water District, California Farm Bureau Federation, Fresno State University and others as "priority least conflict areas" for solar PV development in the San Joaquin Valley (Berkeley Law Center for Law, Energy and the Environment 2016).
- The ultimate removal of solar project infrastructure and reclamation of the Project site in accordance with the proposed Reclamation Plan (Appendix B-1) would facilitate a possible return to non-irrigated agricultural use of the site.
- The Project site is flat and would require minimal grading, resulting in limited alteration of existing drainage patterns or surface disturbance. The density of residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities in the potentially affected area is low.
- Fresno County has participated in a landscape-level planning effort that identified the area where the Project site is located as an area where renewable energy development should be focused to achieve the least conflict with other resource values (Defenders of Wildlife 2012).

Other potential candidate sites that would be reasonable, feasible, accomplish most of the basic objectives of the Project and not be speculative could include other degraded agricultural lands that are not subject to a Williamson Act contact, where the use of irrigation water is prohibited or that otherwise have been identified as a "least conflict area" for purposes of solar development. Such sites include, for example, WWD-owned retired farmland located along both sides of SR 33 as shown and analyzed in Section 5.2.4 of the Westlands Solar Park and Gen-Tie Corridors Plans Draft Program EIR (Westlands Water District 2017).

However, none of these potential alternative sites was carried forward for more detailed review because none of them would avoid or substantially lessen any of the potentially significant impacts of the Project. Construction and decommissioning would generate the same air emissions whether they occurred on this site or within a few miles of it. Special-status species, including San Joaquin kit fox, Swainson's hawk and other raptors, burrowing owl, other special-status or migratory bird species, and tree-roosting bats are not unexpected in the Project area and could as easily be affected by construction or other activities on the Project site as on adjacent or other nearby sites. The geography of these other areas is similar enough and sufficiently proximate to the Project site that

unanticipated discoveries of cultural or paleontological resources could be made. The same roadways that would serve Project construction vehicles also would serve construction vehicles reaching the other identified sites. The increased distances of potential alternative sites to a point of interconnection to the regional grid would result in increased impacts relative to those of the Project with respect to aesthetics (additional poles and wires), collision-related impacts to avian species, wildfire risk (if the transmission lines were strung above ground) or ground-disturbance related impacts for burrowing species (if placed below-ground).

3.2.2 Brownfields or Underutilized Lands

Other potential alternative sites could include brownfields, closed landfills, Superfund sites, Resource Conservation and Recovery Act (RCRA) sites or closed mine lands. The County researched potentially contaminated and underutilized sites identified as appropriate for solar PV projects as part of the United States Environmental Protection Agency's Re-Power America's Lands Project and reviewed the RE–Powering Screening Dataset (which provides details for more than 130,000 sites nationwide, and 997 in California, that have been pre-screened for renewable energy potential) to identify potential utility-scale or large-scale solar PV energy sites in Fresno County that were located on existing contaminated lands, landfills, or mines (USEPA 2021, 2021b). This effort resulted in the identification of one site in Fresno County noted as suitable for utility-scale PV solar development: The American Avenue Landfill site located at 18950 West American Avenue in Kerman.

The American Avenue Landfill site consists of approximately 367 acres and is estimated to have the solar PV capacity potential of 82 MW (USEPA 2020b). The development of a solar project on the American Avenue Landfill site would not meet most of the objectives of the Project because it would not fulfill an executed large generator interconnection agreement for 200 MW solar PV plus 184 MW battery storage and would not provide direct revenue to Fresno County landowners (in the form of easement purchases). Further, pursuant to CEQA Guidelines Section 15126.6(f)(1), issues relevant to the consideration of the feasibility of off-site alternatives include "whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent." Here, the Applicant does not have site access or control the American Avenue Landfill site, whereas it does have a sufficient interest in the Project site to develop it as proposed. For these reasons, the American Avenue Landfill site was not carried forward for more detailed review.

3.2.3 Conservation and Demand Side Management

The County considered whether a conservation and demand side management could provide a viable potential alternative to the Project. Conservation and demand side management consists of a variety of approaches to reduce electricity use and shift electrical demand to times of the day when energy demand is lower. It includes increased energy efficiency and conservation, building and appliance standards, fuel substitution, and load management. Implementation of conservation and demand side management techniques could result in a reduction in demand thus reducing the need for new generation, and thereby serve the region's growing demand for power. While conservation and demand side management approaches are part of a sustainable energy future,

this potential alternative was not carried forward for more detailed consideration because it would not meet most of the basic objectives of the Project, would be infeasible from a technical perspective, and would be speculative.

Increased energy efficiencies and reductions in energy demand would not meet most of the Project objectives. Although these strategies could support goals of protecting farmland and conserving groundwater, they would not provide CCAs with zero-emissions renewable energy to serve their customers, would not use established solar and energy storage technology, would not increase employment opportunities, and would not provide long-term property tax revenue or provide direct revenue to Fresno County landowners in the form of easement purchases.

This potential alternative also was not carried forward because reliance on conservation and demand side management alone would be a technically infeasible alternative to the Project and because it would be speculative. California's long-term Energy Efficiency Strategic Plan (adopted by the CPUC in September 2008 and updated in January 2011) provides an integrated framework of goals and strategies for saving energy through 2020 (CPUC 2008, 2011, 2021). The plan champions specific programmatic initiatives for key market sectors (i.e., commercial, residential, industrial, and agricultural) and a series of "big bold energy efficiency strategies" including all new commercial construction being zero net energy by 2030. Given the aggressiveness of the goals, it would be speculative to assume that savings beyond them could be achieved that would be sufficient to overcome the combined demand-side/supply-side need to address current conditions. While energy efficiency efforts have been effective and will continue to be part of California's overall energy future, it is not expected that conservation and demand-side management alone will be sufficient to address California's rising energy demand.

3.3 Alternatives Evaluated in Detail in this EIR

CEQA Section 15126.6 requires consideration of alternatives to a project that are capable of avoiding or substantially reducing any significant adverse impacts associated with that project. As discussed throughout Chapter 3, *Project Impacts and Mitigation Measures*, the Project would result in either no impact or a less-than-significant impact for the majority of the resource considerations evaluated, and would result in a less-than-significant impact with the incorporation of mitigation measures in five resource categories: Biological Resources, Cultural and Tribal Cultural Resources, and Paleontological Resources, Noise, and Transportation. Potential significant impacts to Noise and Acoustics and Transportation would be temporary, limited to the construction phase. Accordingly, Alternative 1 focuses on the potential to reduce potential significant impacts that, if they occurred, would be longer-term or permanent.

During scoping, a single comment was received regarding alternatives. See Appendix A, *Scoping Report*. Letter F, received from the California Department of Transportation (Caltrans) suggested that Project alternatives should avoid direct access to and from SR 33 during all phases of construction and during normal operations. Instead, Caltrans recommends that site access should occur via Manning Avenue, Adams Avenue, or another local road. The Project as proposed and each of the alternatives described below would avoid access to the Project site directly from SR 33. See Section 2.2, *Location of the Project Site*, and Figure 2-1, *Project Location*, which

explain and show that solar facility site access would be provided consistent with Caltrans' preference, i.e., from West Manning Avenue on the southern portion of the Project site and from West Adams Avenue to the north.

3.3.1 Alternative 1, Reduced Acreage Alternative

Under Alternative 1, a solar energy generating facility and battery storage project would be constructed, operated and maintained, and decommissioned upon a smaller footprint within the Project site. The PG&E infrastructure would be built and operated to support renewable energy development on the Project site, with the exception that under Alternative 1, the size and capacity of the proposed solar facility would be reduced by 20 percent. This would equate to a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce the Project's potential significant impacts relating to vehicle emissions and traffic. On the other hand, a smaller project would offset less greenhouse gas emissions from construction and decommissioning than the proposed Project, such that Alternative 1's greenhouse gas emissions impacts may be greater.

Although Alternative 1 would not meet all of the objectives identified in Section 2.4, *Project Objectives*, most of the basic objectives would be met through implementation of Alternative 1, the Reduced Acreage Alternative. Under Alternative 1, solar facilities and battery ESS would be reduced by 20 percent. The power generation and energy storage capacity would be considerably decreased under Alternative 1. This alternative would only provide 160 MW of generation and 80 MW of battery energy storage and would, therefore, not meet the objectives of providing 200 MW of generation and 184 MW battery storage capacity, or of fulfilling an executed large generator interconnection agreement for 200 MW solar PV. However, the other basic objectives (e.g., providing zero-emissions renewable energy supporting the goal of providing clean energy to CCAs; reducing environmental impacts by using land near existing transmission infrastructure and other solar projects; creating jobs supporting Fresno County; siting the project upon lands under a non-irrigation covenant) would be met under Alternative 1, though likely to a considerably lesser degree compared to the proposed Project.

3.3.2 No Project Alternative

CEQA Guidelines Section 15126.6(e) requires consideration of a No Project Alternative. This analysis discusses the existing conditions at the time the Notice of Preparation (NOP) was published, as well as what reasonably would be 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 No Project Alternative is implemented, the Project site would continue to be used for dry-farmed agriculture and/or left fallow unless and until a different use is proposed. The Project site is designated "Agriculture" as shown on Fresno County General Plan Countywide Land Use Diagram Figure LU-1a and is zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size). If the Project were not approved, then other uses consistent with the AE-20 zoning designation could be made on one or more of the parcels that comprise the Project site. Pursuant to Fresno County Ordinance Code Section 816, uses (among others) that are allowed by right without a permit relate to livestock, poultry, and crops; home occupations; agricultural products; apiaries; kennels; and welding and blacksmith shops. No such competing proposals for site use are before the County. Accordingly, rather than speculate as to possible other uses, the analysis of the No Project Alternative in this Draft EIR assumes a no-development/no Project scenario where the existing agricultural use is continued as it exists under pre-Project conditions.

Under a no-development scenario, the property would continue in agricultural use and the existing environmental setting would be maintained. Changes to that setting, including changes to the landscape (visual resources, habitat, and land use/agriculture); Project-related construction noise, traffic, and air emissions would not occur; and potential ground-disturbance related impacts to cultural tribal cultural resources, wildlife habitat, and environmental benefits relating to maintaining the existing groundcover as it relates to dust control or carbon sequestration, or benefits relating to renewable energy generation would not be realized from solar development of the site.

As a no-development alternative, the No Project Alternative would avoid all Project-related impacts. It would cause no new impacts on the physical environment; i.e., existing land uses would continue to affect environmental conditions as they do now. No legal, regulatory, or technical feasibility issues were identified that would eliminate the No Project Alternative from consideration. However, the No Project Alternative would not meet any of the Project objectives.

3.4 References

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USEPA, 2020b. RE–Powering Screening Dataset. Data set selected for California, utility scale and large utility scale. Accessed October 4, 2021.

Westlands Water District, 2017. Draft Program Environmental Impact Report: Westlands Solar Park Master Plan and Gen-tie Corridors Plan Volume I, Section 5.2.4, Alternative Project Location. https://cs.westlandswater.org/resources/resources_files/misc/\Environmental_Docs/201710/Vol1.pdf. October 2017.

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CHAPTER 4
Environmental Analysis

4.1 Introduction to Environmental Analysis

4.1.1 Overview

This chapter describes and analyzes the direct, indirect, and cumulative environmental impacts of the Project and alternatives, including the No Project Alternative, as they relate to each of the resource considerations identified in the environmental checklist provided in CEQA Guidelines Appendix G. The following resource categories are identified in Appendix G and potential impacts are analyzed in this EIR: Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural and Tribal Cultural Resources, Energy, Geology and Soils (including Paleontological Resources), Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems, and Wildfire.

4.1.2 Environmental Assessment Methodology

4.1.2.1 Environmental Baseline

The analysis of each resource category begins with a description of the existing physical environmental conditions in the geographic area where the Project and alternatives would be implemented. These conditions also are referred to as the "baseline" relative to which Project-caused changes are analyzed to determine whether the change is significant for purposes of CEQA (CEQA Guidelines §§15125, 15126.2). For this Project, baseline conditions are those as they existed in November 2020 when the Notice of Preparation (NOP) was published unless as otherwise noted. The NOP is included as an exhibit to the Scoping Report provided in **Appendix A**. The effects of the Project and alternatives are defined as changes to the environmental setting attributable to Project components or activities. Consistent with CEQA, an EIR need not analyze the effects of the existing environment on a project (including its users or occupants) unless the project exacerbates those conditions.

4.1.2.2 Impact Significance Criteria

CEQA lead agencies rely on impact significance criteria as benchmarks to determine whether changes to the existing environment caused by a project or an alternative would cause a significant adverse effect. A significant effect on the environment is "a substantial, or potentially

substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines §15382).

To guide Fresno County, as the CEQA Lead Agency, in determining whether the Project or an alternative may cause a significant impact on the environment, the preparers of this EIR (identified in Chapter 6, *Report Preparation*) have considered the series of questions provided in the CEQA Guidelines Appendix G Environmental Checklist.

4.1.2.3 Impact Significance Conclusions

This EIR evaluates whether the Project and alternatives would cause a change in the environment. Conclusions reached are based on information in the record, including scientific and factual data as well as professional knowledge and judgment, and the thresholds identified in the resource analyses that follow. Consistent with CEQA and the CEQA Guidelines, significance conclusions are characterized as one of the following:

1. **No Impact:** This signifies that a project or an alternative would not cause any change in the environment relative to the applicable significance criterion; under these circumstances, no mitigation measures would be required or may be imposed, and the project or alternative could not cause or contribute to any cumulative effect.
2. **Less-than-Significant Impact:** This signifies that a project or an alternative could cause an adverse change in the environment, but not one that would be substantial, relative to the applicable significance threshold. Under these circumstances, no mitigation measures would be required or may be imposed. The analysis considers whether the project or alternative could cause or contribute to a potential cumulative effect.
3. **Less than Significant with Mitigation Incorporated:** This signifies that a project or an alternative could cause an adverse change in the environment that would be substantial relative to the applicable significance threshold, but that the implementation of one or more feasible mitigation measures would reduce the significance of the impact below the established threshold. The analysis considers whether the project or alternative could cause or contribute to a potential cumulative effect.
4. **Significant and Unavoidable:** This signifies that a project or an alternative could cause a substantial adverse change in the environment relative to the applicable significance threshold; however, either no feasible mitigation measures are available or, even with implementation of feasible mitigation measures, the significance of the impact would remain above the established threshold. The analysis considers whether the project or alternative could cause or contribute to a potential cumulative effect.
5. **Cumulatively Considerable:** This signifies that a project-specific or alternative-specific contribution to a significant cumulative effect would be considerable when viewed in connection with the incremental impacts of past projects, the impacts of other current projects, and the impacts of reasonably foreseeable probable future projects (as defined in CEQA Guidelines §15130).

To avoid or reduce potential significant impacts where feasible, alternatives have been considered or mitigation measures have been recommended to address them. The effectiveness of recommended mitigation measures has been evaluated by analyzing the impact that would remain

after the implementation of the measure. In some cases, the implementation of more than one mitigation measure may be needed to reduce the significance of an impact below an established threshold. The mitigation measures recommended in this document are identified on a resource-by-resource basis in Chapter 4, *Environmental Analysis.* Potential significant impacts of the Project and associated mitigation measures are summarized in Table ES-2, *Summary of Project Impacts and Mitigation Measures*.

4.1.2.4 PG&E Interconnection Infrastructure

As explained in the Project Description, energy from the proposed solar arrays would be collected onsite and would connect to the electrical grid via an up to 0.2-mile long extension to an existing 230 kilovolt (kV) transmission line (or gen-tie line) proposed to be shared with the Scarlet Solar facility to reach the point of interconnection to the existing Tranquillity Switching Station, which is owned and operated by Pacific Gas and Electric Company (PG&E). Construction, operation, and maintenance of the existing 230 kV gen-tie line (proposed for Project use) was analyzed as part of the Scarlet Solar EIR (SCH No. 2018091022) and this analysis is incorporated herein by reference (Fresno County 2021).

The California Public Utilities Commission (CPUC) has regulatory oversight authority over PG&E and the potential environmental consequences of PG&E's proposed activities. See Section 2.6, *Permits and Approvals*. As such, the CPUC is a responsible agency as part of the County's CEQA process for this Project. To aid and inform the CPUC in the exercise of its authority, this EIR identifies (on a resource-by-resource basis) whether the PG&E infrastructure alone would result in the same or similar impact conclusions and whether the same or different mitigation measures would apply to the PG&E interconnection infrastructure as to the Applicant-proposed solar project.

4.1.3 Cumulative Effects Approach

As defined in CEQA Guidelines Section 15355, the term "cumulative impacts" refers to two or more individual effects, which, when considered together, are considerable or that may compound or increase other environmental impacts. The cumulative impact from multiple projects is the change in the physical environment that results from the incremental impact of the proposed 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 project effects taking place over time (CEQA Guidelines §§15355[b], 15130[a][1]).

The analysis in this chapter evaluates potential cumulative impacts on a resource-by-resource basis by considering the incremental impacts of the Project (or alternative) together with the ongoing effects of past, present, and reasonably foreseeable probable future projects that could cause environmental impacts that are closely related to those caused by the Applicant's proposal. Factors considered in determining whether a project is included in the cumulative scenario include whether it would cause impacts of the same nature as the Project in the same area at the same time.

4.1.3.1 Cumulative Scenario

The "cumulative scenario" consists of the projects that are considered in the cumulative impact analysis. This EIR relies on a blend of two approaches to identify those projects: the "list-of-projects" approach and the "summary of projections" approach (CEQA Guidelines §15130(b)). A list of projects within a 15-mile radius of the Project site that would cause impacts that could combine with those of the Project is provided in **Table 4.1-1**, *Cumulative Projects List*. Although the list of projects is based on a 15-mile radius, the geographic area of cumulative consideration is established on a resource-by-resource basis throughout Chapter 4 as dictated by relevant physical boundaries (such as the extent of the air basin) and is not limited by the area.

The "summary of projections" approach evaluates the impacts of a proposed project in the context of projections made in one or more local, regional, or statewide planning documents or environmental analysis that has been adopted or certified, such as the Fresno County General Plan and the San Joaquin Valley Air Pollution Control District Planning Air Quality Plans. Such plans are prepared by local agencies to meet the requirements of state law and may contain the preparing agencies' comprehensive, long-term visions for physical development or resources conservation within the region.

4.1.3.2 Cumulative Impacts Analysis

Incremental impacts of the Project could combine with the incremental impacts of other projects to cause or contribute to cumulative effects. Direct and indirect effects of the Project and alternatives are analyzed on a resource-by-resource basis throughout this Chapter 4. Where the Project or an alternative would cause no impact to a given resource, it could not cause or contribute to any cumulative impact to such resource. See, e.g., Section 4.17, *Recreation*.

For the remaining resource areas, this EIR analyzes potential incremental impacts of the Project and alternatives combined with the incremental impacts of past, other present, and reasonably foreseeable future projects, and determines whether the incremental impacts of the Project would be significant and, if so, whether the incremental contribution of the Project would be cumulatively considerable. As noted above, the geographic scope of the cumulative effects analysis for each resource area is tailored to the natural boundaries of the affected resource. Unless otherwise noted in the analysis, potential cumulative effects could occur at any time during the conditional use permit period, from the moment on-site activities begin to the conclusion of post-Project site restoration activities. Existing conditions within the cumulative impacts scope reflect a combination of the natural condition and the ongoing effects of past actions in the affected area.

TABLE 4.1-1
CUMULATIVE PROJECTS LIST

Project Name / Applicant	Location	Approximate Distance from Project Site	Description	Status
Past Projects				
RE Tranquillity #1 - #8	Seven miles southwest of the community of Tranquillity, south of Manning Avenue between San Benito Avenue and San Bernardino Avenue	Adjacent, directly south of Project site	3,732-acre, 400 MW PV solar facility, including the Tranquillity Switching Station.	Project approved in 2014 (County of Fresno Department of Public Works and Planning, 2014a, 2014b) and is in operation.
RE Adams East, LLC	East side of State Route 33 between South Avenue and West Manning Avenue	Adjacent, directly east of Project site	322.4-acre, 19 MW PV solar facility	Project began commercial operation in 2014.
Little Bear Solar Project	West side of State Route 33 between West California Avenue and West Jensen Avenue	Within 10 miles (approximately 8 miles north of Project site)	1,288-acre, 180 MW PV solar facility	Project approved February 2019 (County of Fresno Department of Public Works and Planning, 2018a, 2018b) and is currently in operation starting in December 2020 (MCE and Longroad Energy, 2020)
North Star Solar Project	South side of Whitesbridge between San Bernardino and Ohio Ave	Within 10 miles (approximately 8 miles north of Project site)	626-acre, 60 MW PV solar facility and gen-tie line to PG&E's Mendota Substation.	Project approved 2012/2013 and is in operation.
Other Present or Reasonably Foreseeable Future Projects				
Scarlet Solar Energy Project	South of West South Avenue, north of West Dinuba Avenue, east of SR-33, and west of South San Mateo Avenue.	Adjacent, directly east of Project site	4,069-acre PV solar facility to generate up to 400 MWac and related improvements, including eight substations, up to 7.2 miles of 230 kV gen-tie line, a 400 MW energy storage system (consisting of battery or flywheel enclosures and electrical cabling), and other necessary infrastructure.	Approved (County of Fresno Department of Public Works and Planning, 2021b, 2021d). In construction.
Luna Valley Solar Project	South of West South Avenue, north of Dinuba Avenue, and west of SR-33	Adjacent, directly west of Project site	1,300-acre, 200 MW PV solar facility with 200 MW energy storage system	Approved (County of Fresno Department of Public Works and Planning, 2021c, 2021e); In construction.
Three Rocks Solar Project	South of Rose Avenue between Douglas Avenue and Ormsby Avenue	Within 5 miles (approximately 5 miles southwest of Project site)	100-acre solar facility	Unknown

TABLE 4.1-1 (CONTINUED)
CUMULATIVE PROJECTS LIST

Project Name / Applicant	Location	Approximate Distance from Project Site	Description	Status
Other Present or Reasonably Foreseeable Future Projects (cont.)				
Kamm Ave. Pistachio Plant	South of Kamm Avenue, west of SR 33, east of Interstate 5	6 miles south of the Project site.	Nut processing plant on 315.8 acres with capacity to process 60 million pounds of finished pistachio products per year	Planning (County of Fresno Department of Public Works and Planning, 2021a)
Heartland Hydrogen Project	East of Los Angeles and San Bernardino Ave., south of W. American Ave. west of SR 33.	Adjacent to the northern boundary of the Project site	30-acre hydrogen production facility and 2,468-acre solar facility; 2-mile gen-tie line and electrical interconnection[a]	Planning
Mendota Wastewater Treatment Plant (MWWTP) Upgrade	City of Mendota Bass Ave. at W. Belmont	9 miles north of Project site	Construction, operation, and maintenance of a new tertiary wastewater treatment facility within the existing MWWTP.	Planning
Crescent Switching Station (PG&E) and San Joaquin Solar Project Interconnection	South of West Kamm Avenue between South Yuba Avenue and South Butte Avenue	Within 15 miles (approximately 14 miles southeast of Project site)	70 kV Gen Tie Line and Switching Station	Project is in operation.
Mk Operating	28940 West Mt. Whitney Avenue	Within 15 miles (approximately 12 miles southeast of Project site)	Exploratory oil and gas wells	Unknown
VZ Wireless Tower	Southeast corner of South Hudson Ave and West Dinuba Avenue	Within 10 miles (approximately 7.5 miles southwest of Project site)	155-foot-tall lattice tower	Construction permits issued April 30, 2020.

NOTE:

a The MWWTP tertiary treatment upgrade is part of the Heartland Hydrogen proposal but described separately for cumulative analysis purposes,

SOURCES: Fresno County 2020, CPUC 2017, Energy Justice.Net 2020, TDWorld.com 2013, Swinertonrenewable.com 2020, Renewable Energy World 2010

4.1.4 Growth Inducement

Section 15126.2(d) of the CEQA Guidelines provides the following guidance regarding growth-inducing impacts:

> *A project is identified as growth-inducing if it would foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment.*

Growth inducement can be a result of new development that increases employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the Project would require up to 350 on-site personnel during the peak of Project construction. The existing construction labor pool in Fresno County is sufficient for meeting Project needs.[1] Following construction, the Project would require seven full-time staff members and up to 30 intermittent support persons to perform periodic maintenance tasks such as panel washing and repairs. Non-routine (emergency) maintenance could require additional workers. Decommissioning and site restoration activities are expected to require a smaller workforce than construction; decommissioning and site restoration-related activities are expected to take approximately 12 months to complete. Because construction and decommissioning are temporary, the Project is unlikely to cause substantial numbers of people to relocate to Fresno County. Therefore, this Project would not result in a notable increase in employment levels that would significantly induce growth.

It is expected that construction workers would commute to the Project site instead of relocating to Fresno County; however, even if all workers were to migrate into Fresno County, the existing available housing supply could accommodate these workers without requiring new construction. Therefore, the Project is not expected to induce population growth, the housing and provision of services for which could cause significant adverse environmental impacts.

Although the Project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand, and the availability of electrical capacity by itself does not ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effect on growth.

4.1.5 Irreversible Impacts

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continuing phases of the project. Irreversible impacts also can result from damage caused by environmental accidents associated with a project.

[1] According to the State of California's Employment Development Department's Labor Market Information Division, "The unemployment rate in Fresno County was 8.8 percent in August 2021, down from a revised 11.5 percent in August 2020. This compares with an unadjusted unemployment rate of 7.5 percent for California and 5.3 percent for the nation during the same period." (California Employment Development Department 2021).

Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

Buildout of the Project would commit nonrenewable resources during Project construction and ongoing utility services during Project operations. During operations, oil, gas, and other fossil fuels and nonrenewable resources would be consumed and irreversible commitments of small quantities of nonrenewable resources would occur as a result of long-term operations. However, once operational, the Project would result in a substantial net benefit associated with the amount of renewable energy that would be generated.

4.1.6 References

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County of Fresno Department of Public Works and Planning, 2021a. Kamm Avenue Pistachio Processing Plant Draft EIR. February 2021.

County of Fresno Department of Public Works and Planning, 2021b. Scarlet Solar Energy Project Draft EIR. May 2021.

County of Fresno Department of Public Works and Planning, 2021c. Luna Valley Solar Project Draft EIR. May 2021.

County of Fresno Department of Public Works and Planning, 2021d. Scarlet Solar Energy Project Final EIR. August 2021.

County of Fresno Department of Public Works and Planning, 2021e. Luna Valley Solar Project Final EIR. August 2021.

MCE and Longroad Energy, 2020. MCE and Longroad Energy Partner to Unveil MCE's Largest Solar Project. December 2020.

4.2 Aesthetics

This section identifies and evaluates issues related to Aesthetics in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments regarding Aesthetics (Appendix A, *Scoping Report*).

This analysis is based in part on the Project-specific visual simulations prepared on the Applicant's behalf. The preparers of this Draft EIR independently reviewed these and other materials prepared by or on behalf of the Applicants and determined them to be suitable for reliance on (in combination with other materials included in the formal record) in the preparation of this Draft EIR.

4.2.1 Visual Concepts and Terminology

Individuals' values, familiarity with a landscape, concern for a landscape, or interpretation of scenic quality can lead to varying individual determinations of scenic quality and varying individual responses to changes made to a landscape. Due to unique individual attachments to values for a particular landscape, visual changes will inherently affect viewers differently. However, general assumptions can be made about viewer sensitivity to scenic quality and visual changes. In this analysis, visual or aesthetic resources are defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of a given environment. Definitions of the following terms and concepts are provided to aid the readers' understanding of the content in this section.

Visual Quality is defined as the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The attributes of line, form and color combine in various ways to create landscape characteristics whose variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area. For the purposes of this EIR, visual quality is defined according to three levels:

- *Indistinctive, or industrial*: generally lacking in natural or cultural visual resource amenities typical of the region;
- *Representative*: typical or characteristic of the region's natural and/or cultural visual amenities; and
- *Distinctive*: unique or exemplary of the region's natural or cultural scenic amenities.

Viewer Exposure addresses the variables that affect viewing conditions from potentially sensitive areas. Viewer exposure considers the following factors:

- Landscape visibility (i.e., the ability to see the landscape);
- Viewing distance (i.e., the proximity of viewers to a project);

- Viewing angle – whether a project would be viewed from above (superior), below (inferior) or from a level line of sight (normal);
- Extent of visibility – whether the line of sight is open and panoramic to a project area or restricted by terrain, vegetation and/or structures; and
- Duration of view.

Viewer Types and Volumes of use pertain to the types of use (e.g., public viewers including recreationalist and motorist) and amounts of use (e.g., number of recreational users or motorists) that various land uses receive. Generally, recreational users are expected to be highly concerned with scenery and landscape character whereas people who commute through a landscape daily to work are expected to have a lower concern for visual, scenic quality.

Visual Sensitivity is the overall measure of an existing landscape's susceptibility to adverse visual changes. People in different visual settings, typically characterized by different land uses surrounding a project, have varying degrees of sensitivity to changes in visual conditions depending on the overall visual characteristics of the place. In areas of more distinctive visual quality, such as designated scenic highways, designated scenic roads, parks, and recreation and natural areas, visual sensitivity is characteristically more pronounced. In areas of more indistinctive or representative visual quality, sensitivity to change tends to be less pronounced, depending on the level of visual exposure. This analysis of visual sensitivity is based on the combined factors of visual quality, viewer types and volumes, and visual exposure to the Project. Visual sensitivity is reflected according to high, moderate, and low visual sensitivity ranges.

Definitions for the following terms also are provided as they are used to describe and assess the aesthetic setting and impacts from the Project.

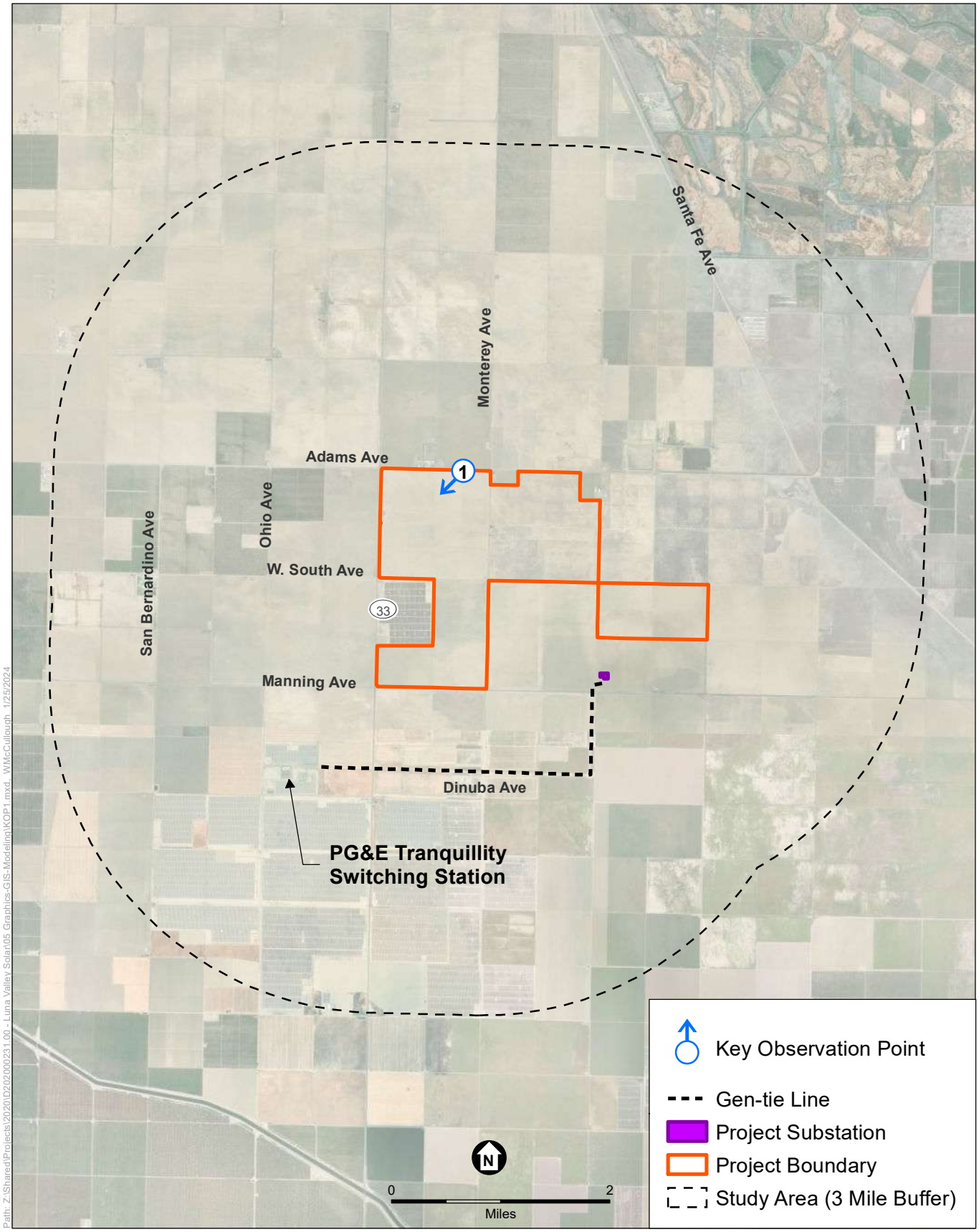
Color is the property of reflecting light of a particular intensity and wavelength (or mixture of wavelengths) to which the eye is sensitive. It is the major visual property of surfaces.

Contrast is the opposition or unlikeness of different forms, lines, colors, or textures in a landscape. The contrast can be measured by comparing a project's features with the major features in the existing landscape.

Form is the mass or shape of an object or objects which appear unified.

A ***Key Observation Point (KOP)*** is a point on a travel route or at a use area or a potential use area, where the view of a proposed activity would be most revealing. For the purposes of the following analysis, KOPs were used to construct a visual simulation of pre-development and post-development views of the Project site. **Figure 4.2-1**, *Key Observation Points Map.*

Landscape character is the arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color, and texture. These factors give the area a distinctive quality that distinguishes it from its immediate surroundings.



Sonrisa Solar Project

Figure 4.2-1
KOP Observation Point

Line is the path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types, or individual trees and branches.

Scenic vista is an area that is designated by a federal, state, or local agency, signed, and accessible to the public for the purposes of viewing and sightseeing. Generally, a vista is considered to be a location from which broad, sweeping views are observed at a distance.

A ***scenic highway*** is any stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency.

Sensitive receptors or sensitive viewpoints include individuals or groups of individuals that have views of a site afforded by a scenic vista, scenic highway, residence, or public recreation area.

Texture is the visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

The ***viewshed*** for a project is the surrounding geographic area from which the project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and roadway orientations.

4.2.2 Setting

4.2.2.1 Study Area

The study area for this analysis of potential impacts to aesthetics includes the Project site and all land within 3 miles of the Project boundary as shown in **Figure 4.2-1**. Land within 3 miles of the Project boundary was chosen as the study area based on the flat nature of surrounding lands and because, from distances further than 3 miles, the curvature of the earth would substantially reduce the visibility of the Project (Senesac 2013).

4.2.2.2 Environmental Setting

Environmental conditions discussed include the regional and local visual environment, sources of light and glare within the Project site; sensitive visual receptors; visual quality of the study area; and the KOP selected to determine existing environmental conditions.

Regional Character

The Project site is located within Fresno County within the San Joaquin Valley, approximately 10 miles northeast of the base of the Diablo coastal mountain range. The region is defined as the San Joaquin Valley, which extends from the Sacramento-San Joaquin River Delta in the north to the Tehachapi Mountains in the south, and from the various California coastal ranges (such as Diablo) in the west to the Sierra Nevada mountain range in the east. The region is dominated by agricultural uses. Views of agricultural fields and orchards are interrupted by farm structures and rural residences. Smaller communities such as Tranquillity and Mendota are interspersed throughout the landscape. Larger cities such as Fresno and Madera are located further east in the

valley. The topography is relatively flat, but elevations gradually rise towards the east, south, and west. The topographic characteristics of the Project site and surrounding region allow for open, expansive views of hills and mountains around the valley (see **Figure 4.2-2**, Representative Photo 1). The valley is a low-elevation flatland that has been altered to support the growth and harvest of agriculture. Rivers in the area, such as the San Joaquin River and the Kings River have been modified and diverted greatly over time and now exist as a part of the large regional water conveyance system created for agricultural use. The major north-south route in the region is I-5, a four-lane divided highway located approximately 7.5 miles west and south of the Project site. I-5 is recognized as a scenic highway by Fresno County (Fresno County 2000). There are no designated state scenic highways and no recognized scenic vistas within the study area (Caltrans 2020a, 2020b; Fresno County 2000). The closest designated state scenic highway is State Route 180, approximately 50 miles east of the site.

Local Character

The Project site is surrounded by a mix of cultivated and fallow agricultural lands, solar energy generation facilities, and scattered rural residences (**Figure 4.2-3,** Representative Photo 2). Generally, the landscape is comprised of a mix of cultivated fields, groves, and fallow fields. Both non-irrigated fields and cultivated agricultural lands surround the Project site. Fields are divided by both paved roads and unimproved, narrow roads that create a grid pattern. The active use of agricultural equipment generates airborne dust, which creates a generally hazy environment where long-distance views are limited. The existing Adams East Solar Project is located adjacent to the Project site, between the northern and southern components of the Project site, east of State Route 33 (SR 33). The existing Tranquillity Solar Project is located approximately 1-mile south of the Project site. These existing solar projects introduce linear, dark, industrial appearing elements to the landscape.

Local visual character is dominated by the presence of agricultural fields and operations as well as surrounding solar projects. Due to the dark color and low-profile nature of the photovoltaic panels, the solar panels generally do not create a high visual contrast with other parts of the landscape and character (**Figure 4.2-4,** Representative Photo 3). Existing power lines, PG&E's Tranquillity Switching Station, and the substations associated with the existing solar generation facilities introduce vertical, industrial appearing structures into the landscape which create a greater level of visual contrast with surrounding rural agricultural land uses (**Figure 4.2-5**, Representative Photo 4, PG&E Tranquillity Switching Station). The mix of rural agricultural views along with views of solar generation facilities in the Project vicinity can be described as representative of views in the region; with a generally rural landscape dominated by agricultural views interspersed with more industrial and developed land uses, existing solar facilities and power lines, as well as machinery, buildings, and structures associated with residential and agricultural operations. Overall, the visual character of the Project site is a combination of both agricultural and industrial elements.

2019\D2019007530.00 - EDP Renewables Sonrisa Solar Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2021

EDP Renewables Sonrisa Solar Project

Figure 4.2-2
Representative Photo 1

ESA

2019\D2019007530.00 - EDP Renewables Sonrisa Solar Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2021

EDP Renewables Sonrisa Solar Project

Figure 4.2-3
Representative Photo 2

ESA

2019\D2019007S3.00 - EDP Renewables Sonrisa Solar Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: EDPR, 2021

EDP Renewables Sonrisa Solar Project

Figure 4.2-4
Representative Photo 3

ESA

2019\D2019007530.00 - EDP Renewables Sonrisa Solar Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: ESA, 2021

EDP Renewables Sonrisa Solar Project

ESA

Figure 4.2-5
Representative Photo 4
PG&E Tranquillity Switching Station

On-Site Views

Representative Photo 5 (**Figure 4.2-6**) depicts the existing character of the landscape on the Project site. The site has periodically been dry farmed for grain for rangeland grasses or lain fallow. The site is generally flat with elevations ranging from 164-188 feet above mean sea level (amsl) with the highest elevation in the southwest corner and the lowest elevation in the northeast corner. Various dirt roads and agricultural structures are present on the Project site. The Diablo Range is visible in the distance in views to the southwest. Power lines line the roads that border the Project site. Existing on-site views may be characterized as representative.

Lighting Environment

There is no existing lighting within the Project site. Within the Project area, there are limited sources of outdoor lighting such as streetlights from the cities of Tranquillity, San Joaquin, and Mendota, structural lighting at scattered residential locations, and security lighting from adjacent solar energy generation facilities. Other sources of light include automobile traffic on surrounding roadways such as SR 33, Manning Avenue, South Monterey Avenue, and West Adams Avenue.

Existing sources of glare on the Project site periodically may include vehicles or equipment used for agriculture operations. Near the Project site, existing solar projects including the Tranquillity and Adams East projects and their associated substations could be a source of glare at certain times of day.

Viewer Types and Exposures

Potential public viewer groups evaluated for this analysis include motorists along major or scenic roadways, visitors to parks and recreational areas, and visitors to scenic vistas. For each viewer group analyzed, viewer exposure conditions were evaluated based on information of traffic flows along local roadways in Section 4.18, *Transportation*.

Variables considered include the angle of view, the extent to which views are open or screened, the duration of view, and viewing distance. Viewing angle and extent of visibility consider the relative location of the Project site to the viewer and whether visibility conditions would be open or panoramic, or limited by intervening vegetation, structures, or terrain. Duration of view pertains to the amount of time the Project typically would be seen from a sensitive viewpoint. In general, duration of view would be shorter in instances where the Project would be seen for short or intermittent periods (such as from major travel routes and recreation destination roads) and greater in instances where the Project would be seen regularly and repeatedly (such as from public use areas). Viewing distances are described according to whether the Project would be viewed within a foreground (within 0.5-mile), middle ground (0.5-mile to 2 miles), or background (beyond 2 miles) zone.

2019\D2019007753.00 - EDP Renewables Sonrisa Solar Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: EDPR, 2021

EDP Renewables Sonrisa Solar Project

Figure 4.2-6
Representative Photo 5

ESA

Motorists on Major or Scenic Travel Routes

There are no state-designated or eligible highways near the Project site. SR 180 (from the eastern edge of Fresno to Cedar Grove in Kings Canyon National Park) is Fresno County's only officially designated state scenic highway. This portion of SR 180 is approximately 50 miles from the Project site. The California Scenic Highway Mapping System identifies four highway segments that are potentially eligible for future designation as scenic highways, including: a portion of Route 65 near Huntington Lake/Clovis; a portion of Route 65 near Minkler/Kings Canyon; portions of Route 198 and Route 33 near Coalinga/Oilfields; and I-5 (DOT 2021a; DOT 2021b). The Project site is not located within a viewshed of any of these eligible segments. As mentioned above, I-5 is a County-designated scenic route approximately 7.5 miles south and west of the Project site (Fresno County 2000). The Project site was determined not to be visible or identifiable from I-5 due to intervening distance, existing developments, and vegetation. Therefore, the travel routes identified in this analysis (as discussed further in Section 4.18, *Transportation*) include West Adams Avenue, Manning Avenue, and SR 33, as they are the closest roadways to the Project site. These roadways provide views of the Diablo Range to the west as well as views of agricultural fields and can be considered to have representative views. As these roads are not considered scenic travel routes, and surrounding land uses include existing agricultural operations and other solar generating facilities, it is assumed that travelers along these routes generally use the roadways for commuting purposes.

Parks and Recreational Areas

Recreational users are generally determined to be the viewers most sensitive to visual impacts. As described in Section 4.17, *Recreation*, the closest recreational areas to the Project site are the Mendota Wildlife Area and Three Rocks fishing access located approximately 4 and 6 miles, respectively, from the Project site. These recreational areas are outside of the study area and the Project site would not be recognizable from these recreational locations.

Scenic Vistas

There are no County General Plan-designated scenic vistas in the Project vicinity. Additionally, Google Earth was used to search for any natural, elevated scenic vistas near the Project site. Due to the flat nature of the study area and region, there are no unique, elevated areas from which an individual could gain an exemplary high-quality view within the vicinity of the Project site.

Visual Sensitivity

A KOP was established to provide a representative cross-section of affected landscapes in the visual resources study area. The KOP location was selected based on the Project's viewshed and visual exposure, as shown on Figure 4.2-1. Comparisons of existing (pre-Project) views from this location with a post-development visual simulation[1] is provided in **Figure 4.2-7**. This KOP location provides the basis for showing the visual character and quality of views toward the Project site that could be applied from other vantage points, such as SR 33. Infrastructure elements (such as additional solar arrays and the existing gen-tie line) evaluated as part of the Scarlet Solar project

[1] Note: the visual simulation reflects a view of the site that would be similar to what a motorist would see from other observation points, such as traveling north or south along SR 33.

are now being considered as part of the Sonrisa CUP application and are incorporated herein by reference.

As defined above, visual sensitivity is determined by a composite measurement of the overall susceptibility of an area or viewer group to adverse visual or aesthetic impacts given the combination of existing landscape quality, viewer type, and exposure conditions. **Table 4.2-1** summarizes the overall visual sensitivity of the major viewer types that would be affected by the Project.

TABLE 4.2-1
SUMMARY OF VISUAL SENSITIVITY FINDINGS: VIEWER TYPES, VISUAL EXPOSURES, AND VISUAL QUALITY

Primary Viewer Type	Visual Quality	Use and Visual Exposure Description	Visual Sensitivity	Visible Project Elements
Local Motorists				
West Adams Ave (KOP 1)	Representative	Brief views by local motorists, low view angle, unobstructed. Short view duration.	Low to Moderate	Solar panels and distribution lines[a]

NOTE:
a The KOP and visual simulation present a worst-case scenario and include distribution lines that are no longer proposed as part of the Project.

4.2.2.3 Regulatory Setting

Federal

No federal regulations, plans, or standards govern the Project relating to aesthetics.

State

Other than the State Scenic Highway Program summarized in the discussion of Regional Character in Section 4.2.2.2, no other state regulations, plans, or standards govern the Project relating to visual resources.

Local

Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan evaluates the scenic resources of Fresno County and provides policies intended to protect the County's scenic resources and ensure that development enhances those resources through various measures including identification, development review, acquisition, and other methods (Fresno County 2000). According to this element, the Project site has not been identified as a scenic resource.

The Fresno County General Plan also includes policies intended to protect scenic resources along roadways of the County by identifying, developing, and maintaining scenic amenities along County roads and highways and ensuring that development enhances those resources. According to Policy OS-L.1, Fresno County has designated a system of scenic roadways that includes

landscaped drives, scenic drives, and scenic highways. According to this element, the only designated scenic roadway in the vicinity of the Project site is I-5, which is designated as a scenic highway. The inset in Figure 4.2-1 (Regional Location) shows I-5 in relation to the Project site. There are no other scenic resources or vistas identified in the General Plan.

The policies in the Fresno County General Plan for scenic resources relevant to the Project are provided below.

Policy K. Scenic Resources

Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

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 into 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 L. Scenic Roadways

Goal OS-L: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.

***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: … b. 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.

4.2.3 Significance Criteria

The Project would result in significant impacts to aesthetics if it would:

a) Have a substantial adverse effect on a scenic vista;

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

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, conflict with applicable zoning and other regulations governing scenic quality; or

d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

4.2.4 Direct and Indirect Effects

4.2.4.1 Methodology

This visual impact assessment identifies and assesses any potential short- or long-term adverse visual impacts on Aesthetics and visual resources that could result from implementation of the Project. In the absence of a generally approved state or local system for evaluating the significance of potential impacts to Aesthetics, this assessment included the following steps:

1. Identifying Project components that could affect representative views in the study area in terms of visual quality, character, and levels of light and glare, as informed by plans, descriptions, and simulations provided by the Applicant; Google Earth Pro aerial photographs and street-level photography; Fresno County Geographic Information System (GIS) topographic and land use data; and U.S. Geological Survey topographic data.
2. Assessing the Project's impacts to identified views by evaluating potential Project-caused change in the affected area's baseline visual quality and character.

A significant visual impact may occur when: (1) a project perceptibly changes the existing physical features of the landscape that are characteristic of the region or locale; (2) a project introduces new features to the physical landscape that are perceptibly uncharacteristic of the region or locale, or become visually dominant in the viewshed; or (3) a project blocks or totally obscures valued aesthetic features of the landscape. The degree of visual impact depends on how noticeable the visual change is in conjunction with the visual sensitivity of the site. The noticeability of a visual impact is a function of the Project features, context, and viewing conditions (angle of view, distance, and primary viewing directions). The key factors in determining the degree of visual change are visual contrast, project dominance, and view blockage.

Visual Contrast

Visual contrast is a measure of the degree of change in line, form, color, and texture that the Project would create, when compared to the existing landscape. Visual contrast ranges from none to strong, and may be defined as:

1. **None** – The element contrast is not visible or perceived
2. **Weak** – The element contrast can be seen but does not attract attention
3. **Moderate** – The element contrast begins to attract attention and begins to dominate the characteristic landscape
4. **Strong** – The element contrast demands the viewer's attention and cannot be overlooked

Project Dominance

Visual dominance is a measure of a project feature's apparent size relative to other visible landscape features in the viewshed, or seen area.

View Blockage or Impairment

View blockage or impairment is a measure of the degree to which Project features would obstruct or block views of aesthetic features due to the Project's position and/or scale.

Overall Adverse Visual Impact

Overall adverse visual impact reflects the composite visual changes to both the directly affected landscape and from sensitive viewing locations (**Table 4.2-2,** *Guidelines for Determining Adverse Visual Impact Significance*).

TABLE 4.2-2
GUIDELINES FOR DETERMINING ADVERSE VISUAL IMPACT SIGNIFICANCE

Overall Visual Sensitivity	Overall Visual Change				
	Low	**Low to Moderate**	**Moderate**	**Moderate-to-high**	**High**
Low	Not Significant	Not Significant	Adverse, but Not Significant	Adverse, but Not Significant	Adverse, but Not Significant
Low to Moderate	Not Significant	Adverse, but Not Significant	Adverse, but Not Significant	Adverse, but Not Significant	Adverse, but Not Significant
Moderate	Adverse, but Not Significant	Adverse, but Not Significant	Adverse, but Not Significant	Adverse and Potentially Significant	Adverse and Potentially Significant
Moderate-to-high	Adverse, but Not Significant	Adverse, but Not Significant	Adverse and Potentially Significant	Adverse and Potentially Significant	Significant
High	Adverse, but Not Significant	Adverse and Potentially Significant	Adverse and Potentially Significant	Significant	Significant

NOTES:

Not Significant impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.

Adverse but Not Significant Impacts are perceived as negative but do not exceed environmental thresholds.

Adverse and Potentially Significant Impacts are perceived as negative and may exceed environmental thresholds depending on project- and site-specific circumstances.

Significant impacts with feasible mitigation may be reduced to less than significant levels or avoided all together. Without mitigation or avoidance measures, significant impacts would exceed environmental thresholds.

Simulation Preparation

To represent views that would be experienced from sensitive viewpoints, a KOP was selected for the simulation of post-Project conditions.[2] KOP 1 depicts views of the Project site looking southwest from West Adams Avenue approximately 0.25 mile west of South Monterey Avenue. The KOP is a single representative viewpoint that reflects the impact that implementation of the Project would have on one or more sensitive receptors. Sensitive receptors near the Project site include motorists, residents, and recreationalists traveling along roadways. The KOP includes three components: (1) identification and photo-documentation of the KOP, (2) classification of the visual sensitivity of the KOP, and (3) evaluation of the potential significance of Project-

[2] Note: subsequent to the preparation of the visual simulations, the proposed Project was modified to no longer include the generation tie (distribution) line initially proposed and depicted in the visual simulations. The visual simulation (as a worst-case scenario) demonstrates more visual effects than those proposed by the (current) Project.

related changes. The location of and viewing direction from the evaluated KOP is shown on Figure 4.2-1.

Visual simulations of the Project from the identified KOP were prepared to provide a "worst-case scenario" comparison of pre- and post-Project conditions as well as context for qualitative description of the aesthetic changes that would result from the Project. The visual simulation provided are the results of an objective computer modeling process that involves three–dimensional (3-D) computer modeling developed using conceptual engineering design data combined with geographic information system (GIS) and engineering data and digital aerial photographs of the existing site to produce digital modeling for simulation of the Project. For the simulation viewpoint, the photograph location was incorporated based on GPS field data.

4.2.4.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact for criteria c) and d) and no impact with respect to criteria a) and b). Impact conclusions for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would have a substantial adverse effect on a scenic vista.

There are no designated scenic vistas within the viewshed of the Project site. There would be no impact under this criterion. **(*No Impact*)**

Criterion b) Whether the Project would substantially damage scenic resources, including (but not limited to) trees, rock outcroppings, and historic buildings within a state scenic highway.

There are no designated state scenic highways near the Project site. The portion of SR 180 from the eastern edge of Fresno to Cedar Grove in Kings Canyon National Park is Fresno County's only officially designated state scenic highway. This portion of SR 180 is approximately 50 miles from the Project site. The California Scenic Highway Mapping System identifies four highway segments that are potentially eligible for future designation as scenic highways (DOT 2021a; DOT 2021b). The Project site is not located within the viewshed of any of these eligible segments.

Though not designated as a state scenic highway, the Fresno General Plan designates I-5 as a scenic highway. However, the Project site would not be seen by motorists traveling on I-5 due to the intervening distance (approximately 7.4 miles) combined with the height of trees, other vegetation, and existing developments on intervening properties.

In addition, there are no significant trees, rock outcroppings, or historical buildings on the Project site that would be affected by the Project, and the Project would not alter long-distance scenic views of mountains, valleys, or other natural features. For these reasons, the Project would cause no impact on scenic resources viewed from a state scenic highway. **(*No Impact*)**

Criterion c) Whether the Project would substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Impact 4.2-1: The Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings (*Less than Significant Impact*)

CEQA Guidelines Appendix G Section I suggests, "In non-urbanized areas," a project would have a significant effect on the environment if it would "substantially degrade the existing visual character or quality of public views of the site and its surroundings." Public views are defined for purposes of this inquiry as "those that are experienced from publicly accessible vantage point." The Guidelines recommend a different consideration for projects proposed to be located in urbanized areas. Because the Project is not proposed in an area that meets the CEQA definition of "urbanized" (Pub. Res. Code §21071), the analysis below focuses on the potential for the Project or an alternative to substantially degrade the existing visual character or quality of public views.

Construction

Construction of the Project would involve earthwork, grading, and the construction, erection, and installation of facility equipment and infrastructure. These activities would require the presence and movement of delivery trucks, vehicles, and construction equipment. Additionally, construction activities would require the use of storage, staging, and active work areas. More details regarding specific activities and equipment required are provided in Section 2.5.5, *Construction*. The construction period is anticipated to last approximately 10-14 months; accordingly, all activities associated with construction would be temporary. Additionally, the location and use of equipment in active work areas would change during the construction period depending on which portions of the Project site were under active construction.

Construction would introduce a level of activity and visual change to the Project site associated with construction activities and the presence of construction equipment. As described in Section 4.2.2.1, *Environmental Setting*, the existing visual character of the Project site is characterized as a combination of agricultural and industrial. The presence of agricultural equipment and airborne dust from agricultural activities and natural functions is common.

Overall visual sensitivity of motorists near the Project site would be considered low to moderate as the duration of view would be brief for motorists traveling on these roadways. The degree of visual change that would result from the Project would be low to moderate. Therefore, as shown in Table 4.2-2, the visual impacts of Project construction would be considered adverse but not significant. Therefore, although construction of the Project temporarily would result in a degree of adverse change to visual quality on the Project site, construction would not impair or block any sensitive or unique visual resources or landscapes. Therefore, impacts to visual resources from construction would be less than significant.

Operation and Maintenance

A visual simulation was developed to depict the expected appearance of the solar facility, PG&E infrastructure, and related improvements described in Chapter 2, *Project Description*. **Figure 4.2-7** shows how Project components may appear to sensitive viewers at the KOP from the roadway as compared to existing (pre-Project) views at the location.

Views of the Project site from SR 33 would be of short-to-medium duration (i.e., fleeting) as the roadway borders the Project site. Due to the low-profile nature of the PV arrays, views of the Project by motorists would be in the middle-ground range along the horizon. Views of battery storage enclosures and/or inverters would differ depending on the type of ESS selected and the distance and duration of views. As motorists drive closer to the Project Site, the solar facilities and ESS would be increasingly prominent along the middle-ground of views. The extent of views of the Project site would be open and panoramic. As discussed in Section 4.18 *Transportation,* traffic flows during peak hours along SR 33 may have a volume of 160 cars per hour. Given this, it can be assumed that this roadway has a moderate number of viewers depending on the day and an overall low-to-moderate level of visual sensitivity.

The existing view reflects paved SR 33 and fallow agricultural fields in the foreground and middle-ground. Power lines are visible along the road and recede into the distance. The foreground landscape is brown and contains low-lying crops. The colors present in this view would change depending on the season and are likely to be brown in the winter or fall and green in the spring or summer. Development is visible along the horizon as a thin dark line along the horizon. The simulation reveals that the Project would appear in the middle ground along the horizon and would introduce a slightly wider dark line along the horizon. As drivers approach the Project site, the visible presence of solar panels would increase and would move further into the foreground. The centrally located energy storage system (at the substation) would not be visible from SR 33. Alternatively, if distributed (DC coupled) batteries and inverters are installed, these industrial elements would visually blend in with the PV solar infrastructure. Perimeter fencing would also be visible, though such features would not obstruct views. This would create a moderate visual contrast with the existing landscape. Project elements would contribute industrial elements in the visual landscape and would begin to dominate views in the landscape, but they would not obstruct or obscure any element in existing views. In the context of the existing local visual character and quality the Project would result in an increase in the presence of industrial elements to a local visual character that already includes such elements. Visual sensitivity is considered low to moderate and the amount of visual change that would be introduced by the Project is considered moderate. The visual impact from the Project would be considered adverse but not significant. Therefore, the Project would introduce a moderate degree of change in local visual quality. Given the low-to-moderate visual sensitivity of motorists traveling along SR 33, impacts would be less than significant.

Views of the Project site from West Manning Avenue would be of short-to-medium duration as the roadway borders the Project site. Due to the low-profile nature of the proposed solar arrays, views of the Project would be visible in the middle ground as drivers approach the site. As mentioned in Section 4.18 *Transportation,* traffic flows during peak hours may have a volume of

Existing

Simulation as Proposed

SOURCE: EDPR, 2021

EDP Renewables Sonrisa Solar Project

Figure 4.2-7
KOP 1

160 cars per hour. Given this information, it can be assumed that this roadway has a moderate number of viewers depending on the day and an overall low-to-moderate level of visual sensitivity.

The existing view shows paved West Manning Avenue and a fallow agricultural field in the foreground and middle ground which creates a flat, broad, expansive plane of mostly brown. The colors present in this view change depending on the season and are likely to be brown in the winter or fall and green in the spring or summer. The Diablo Range is visible in the background. Existing views are typical for the region and the landscape lacks a distinct form in the foreground but retains a distinctive background due to the Diablo Range. Views retain a feeling of openness due to the expanse of agricultural fields in the foreground and the presence of the Diablo Range in the background.

The Project would create a moderate visual contrast along the horizon. The solar panels would follow the existing line along the horizon but would introduce a darker line which would resemble a flat shadow near the horizon. Overall, this demonstrates that Project elements such as solar panels and associated infrastructure would introduce a moderate visual contrast in the landscape but would not dominate the landscape or block existing visual elements. Additionally, Project components would not block or impair scenic features present in the viewshed. As a result, the overall visual change to the existing character and visual quality of the Project site would be moderate. In conjunction with the low-to-moderate visual sensitivity, impacts to visual quality resulting from the Project would be adverse but would not be significant.

KOP 1

Figure 4.2-7 shows existing and post-development visual simulations of the Project site looking southwest along West Adams Avenue. This KOP depicts views as seen by motorists traveling west along West Adams Avenue. As shown in Figure 4.2-7, views of paved West Adams Avenue, utility poles, and agricultural fields are available in the foreground. In the middle ground, the existing agricultural fields are visible on the Project site. The Diablo Range is visible in the background. Existing views from KOP 1 are considered representative of publicly accessible views in the area. The Diablo Range creates a distinct form in the background and increases the feeling of openness in views from KOP 1. In the foreground, agricultural fields are visible, and utility poles and paved streets encroach slightly on views of the surrounding agricultural views. Views of the Project site from West Adams Avenue would be of short-to-medium duration as the roadway borders the Project site. Due to the low-profile nature of the solar arrays, views of the Project would be visible in the middle ground as drivers approach the site. As described in Section 4.18, *Transportation*, peak hour traffic volumes on West Adams Avenue are approximately 14 vehicles. Therefore, it can be determined that West Manning Avenue has a low level of viewers, depending on the time of day and a low-to-moderate level of visual sensitivity, as identified in Table 4.2-1.

The existing view shows paved roads and utility lines in the foreground, agricultural fields in the middle ground and the Diablo Range in the background. Existing views at KOP 1 are typical for the region and the landscape lacks a distinct form in the foreground but retains a distinctive background due to the Diablo Range. The Project would create a weak to moderate visual contrast

along the horizon. As shown in the simulation, the solar panels and associated infrastructure would follow the existing line along the horizon but would introduce a more distinct and larger linear industrial form. Overall, this KOP demonstrates that Project elements would introduce a moderate visual contrast in the landscape, but would not dominate the landscape or block important visual elements. As shown in the visual simulation, from KOP 1, the solar panels would increase the amount of visual encroachments in views and would decrease the amount of open agricultural space visible from KOP 1, but would not dominate the landscape or substantially block important visual elements. Therefore, the Project would introduce a level of visual change that would be moderate. In conjunction with the low-to-moderate visual sensitivity, impacts on visual quality resulting from the Project would be less than significant.

The above analysis of the views demonstrates that the Project would introduce a low to moderate or moderate level of visual contrast to the existing landscape depending on the viewing location and would have the potential to dominate views from certain locations. However, Project elements would not block or impair any unique scenic features in the viewshed. Viewers from distances of 1.5 miles or greater would barely be able to see the Project components along the horizon. Overall, given the energy infrastructure-related industrial nature of views in the Project vicinity and the low-to-moderate sensitivity of viewers, the Project would introduce a level of visual change to local visual quality and character that would be less than significant.

Decommissioning and Site Restoration

Project decommissioning and site restoration activities would remove Project components and perform land restoration activities as described in Section 2.5.7, *Decommissioning and Site Reclamation.* Construction equipment and vehicle-related visual impacts during decommissioning would be similar to impacts that would result from construction. Decommissioning and site restoration would result in a temporary adverse visual change due to the work activities and the presence of equipment. However, as discussed in Section 4.2.2.1, *Environmental Setting,* the existing visual quality of the landscape includes such equipment and decommissioning would not block or impair any unique visual resources. Additionally, although the decommissioning process would result in temporary adverse visual impacts, site restoration would restore the Project site to its original (pre-Project) visual quality. As a result, impacts to visual resources from decommissioning would be less than significant.

Criterion d) Whether the Project would create a new source of light and glare which would adversely affect day or nighttime views in the area.

Impact 4.2-2: The Project would not create a new source of light and glare that would adversely affect day or nighttime views in the area (*Less than Significant Impact*)

In this analysis, “light” refers to artificial light emissions, or the degree of brightness generated by a given source and “glare” is the sensation produced by luminance in the visual field that is sufficiently greater than the luminance to which the eye has adapted to cause annoyance, discomfort, or loss of visual performance and visibility (BLM 2013). Viewer groups affected by light and glare near the Project area would include motorists.

Construction

Lighting: Construction of the Project would be expected to occur during daylight hours. Some nighttime activities may be performed such as electrical connection, inspection, and testing activities. However, as described in Section 2.5.5.5, *Construction Schedule and Workforce*, such activities would be performed with temporary lighting that would be directed downward to focus illumination on work areas and minimize impacts to neighboring properties and wildlife in the Project vicinity. Any lighting used during construction activities would be occasional, temporary, and shielded downward. Therefore, the potential for nighttime lighting during construction to impact nighttime views would be minimal. Impacts would be less than significant.

Glare: Construction would involve increased vehicle traffic and the presence, transport, and use of construction equipment and materials. These activities temporarily would increase glare conditions near the Project site due to an increased presence of reflective materials on the Project site, potentially including construction equipment and vehicle windows. However, an increase in glare that could result from the presence of construction equipment or materials would be minimal and temporary. Only portions of the Project site would be actively under construction at a particular time. Such new temporary sources of glare would not remain in any one fixed location for the entire duration of construction but would be present at different locations depending on the phase of construction activities throughout the site. As a result, Project construction would not introduce new, substantial sources of glare that could affect daytime views in the vicinity and impacts would be less than significant.

Operation and Maintenance

Lighting: As described in Section 2.5.1.4, *Other Infrastructure,* lighting proposed for the operation and maintenance phase of the Project would include low-level security lighting within the control building and within the O&M building. The substation and O&M facilities are proposed to be located at the interior of the Project site (relative to the roadways) and so would allow for a degree of shielding by the PV solar field. Low-profile lighting also may be installed at entry and exit gates. Manually controlled lights would be installed at equipment pads and substations. Additionally, consistent with local design requirements (Fresno County 2000), all lighting would be shielded and downward facing. Compliance with design and development standards would ensure that potential impacts from lighting are minimized. Due to the minimal amount of shielded lighting that is proposed for the operation and maintenance phase of the Project, impacts to nighttime views from lighting would be less than significant.

Glare: The reflection of sunlight off of solar panel surfaces would be the primary source of potential glare from the Project. However, solar panels are constituted of many solar cells which are designed to capture solar energy in order to convert it into usable energy. Therefore, solar panels are designed to be as light-absorptive as possible in order to maximize the efficiency of energy production. When compared to common reflective surfaces, solar panels are found to produce around the same amount of reflectivity as water, which is about half the amount of reflectivity as standard glass that is commonly used in residential or commercial applications (Shields 2010). Additionally, the light reflected from the PV panels would travel above the line of sight of most if not all viewers. PV panel tracking systems would position the arrays so that the

sun's rays are perpendicular to the face of the panel. Therefore, light reflected from the panel would be reflected back toward the sun. During midday conditions, light would be reflected upward toward the sky. The maximum downward angle of the panels would not be below 30 degrees. Therefore, even when the sun angle is low, the reflected sunlight would be directed away from ground-level receptors and motorists along local roads. Additionally, due to the distance between the Project site and the nearest airport (the San Joaquin Airport approximately 7.5 miles away) and the angle from which the site could be viewed by pilots, the Project is not expected to adversely affect the vision of pilots during takeoff or landing. As a result, impacts would be less than significant.

Decommissioning and Site Restoration

The impacts of both light and glare during decommissioning and site restoration would be similar to those identified for construction. Decommissioning is not likely to include nighttime activities and would not create a source of lighting or introduce light pollution that would impact nighttime views. Although decommissioning activities would require the use of vehicles and equipment similar to that required for construction, any sources of glare would be minimal and temporary as equipment would be moved between active work locations on the Project site. As the Project site would be restored to pre-Project conditions – agricultural fields – following the operational life of the Project, there would be no remaining permanent sources of light or glare. As a result, the Project would not cause significant glare or lighting impacts. The Project's light and glare impacts associated with decommissioning and site restoration would be less than significant.

PG&E Infrastructure

As described in Chapter 2, *Project Description*, energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Tranquillity Switching Station. Construction of the up to 0.2-mile extension to an existing PG&E 230 kV gen-tie line would result in the use of vehicles and equipment to erect the transmission poles and connect the transmission lines to the Project site. This impact would be temporary and would not result in a substantial visual contrast compared to existing conditions. Project operation would result in the presence of 140-foot power poles. There are existing power lines and distribution lines on and near the Project site. Therefore, the additional power poles would not create a substantial amount of contrast compared to existing conditions. Therefore, Project construction, operation, and decommissioning would result in a less-than-significant impact relating to the potential for a substantial adverse effect on a scenic vista, a substantial degradation of the character or visual quality of views from publicly accessible vantage points or to substantially damage scenic resources within a state scenic highway. Similarly, because the new transmission support structures and other infrastructure would not include substantial new sources of light or glare, the construction and modifications of PG&E infrastructure would have a less-than-significant impact. Therefore, the combined impacts of the Project and PG&E infrastructure would be less than significant.

4.2.4.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Under Alternative 1, all aspects of the Project would remain as described in Chapter 2, *Project Description*, with the exception that under Alternative 1, the size and capacity of the proposed solar facility would be reduced by 20 percent. This would equate to a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. Due to the 20 percent reduced size of this alternative, the amount of traffic and equipment on-site would be slightly lower during construction and decommissioning than the amount of traffic generated by the proposed Project. Compared to the Project described in Chapter 2, the reduction of the Project site footprint under Alternative 1 would be realized in the removal of solar panels within the area approximately 1,000 to 1,200 feet adjacent east of SR 33 (see **Figure 3-1**). The solar panels would remain visible from the roadway in foreground views. While the reduced footprint of the Project site would reduce the visual impact of the solar generating facility during Project operation slightly, it would create a low-to-moderate visual change. Coupled with the low-to-moderate visual sensitivity, the visual impact of Alternative 1 would be similar to the impact of the Project (less than significant).

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar facilities would be constructed, operated, or reclaimed; and the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Aesthetics.

4.2.5 Cumulative Analysis

As discussed above, there would be no impact with respect to scenic resources within a state scenic highway or scenic vistas because there are none in the Project study area. Therefore, neither the Project nor alternatives could cause or contribute to cumulative impacts regarding these considerations. Additionally, due to the isolated angles at which glare is experienced, the Project's less-than-significant impact related to glare could not combine with impacts from other facilities. Therefore, the Project's impact to visual resources resulting from glare would not cause or contribute to a significant adverse cumulative impact.

The geographic scope of potential cumulative impacts to the existing visual character or quality of public views includes the viewshed along SR 33, West Adams, and West Manning Avenue and locations from which a viewer could see the Project along with other projects (in other words, where visual impacts could accumulate). Generally, projects located 3 or more miles distant from the Project site would not be visible within the same viewshed as the Project. See Table 4.1-1, *Cumulative Projects List*, for relative distances between the Project site and other present and reasonably foreseeable future projects that could contribute to cumulative impacts to aesthetics.

Cumulative aesthetic impacts could occur if the Project contributes to visual changes to the landscape that are visible or perceived by the public, either within the same viewpoints, or as a noticeable element in a cumulative viewing experience (e.g., a motorist on SR 33 or a local road).

Ongoing aesthetic impacts of past projects are reflected in the environmental setting described in Section 4.2.2 and include the visual impacts of existing solar facilities such as the Adams East and Tranquillity solar projects. In this context, impacts from the Project or an alternative could result in a cumulative effect on visual resources in combination with other past, present, or reasonably foreseeable future actions. Cumulative construction disturbances from proposed or approved-but-not-yet-constructed projects such as the Scarlet and Luna Valley solar projects and the Heartland Hydrogen Project could include traffic, temporary facilities and equipment, and dust from earth moving and exposed soil. Operation and maintenance-related cumulative visual impacts could include nighttime security lighting, increased vehicle and personnel activity, visual changes to landscapes due to solar facilities, and increases in the level of glare in the area relative to baseline conditions. Decommissioning and restoration activities would contribute similar visual impacts to those identified for construction.

Cumulative aesthetic impacts could occur as long as the Project contributes visual changes to the landscape that are noticeable by the public, either from the same viewpoint or as a noticeable element in a cumulative viewing experience. The Tranquillity and Adams East solar projects are adjacent to the Project site and collectively consist of approximately 4,054 acres of PV facilities. The Scarlet and Luna Valley solar projects and the Heartland Hydrogen Project also would be adjacent to the Project site. If constructed, they would add up to 7,857 acres of solar and other renewable energy components to the Project's proposed 2,000 acres by converting up to 9,587 acres of additional open, agricultural land to the more industrial look of solar and other renewable energy facility uses.

As discussed in Section 4.2.2.2, *Visual Sensitivity*, public viewing locations within a 3-mile radius of the Project site would be limited to motorists, represented by those traveling on SR 33, West Manning Avenue, and West Adams Avenue. These viewers would have a low to moderate visual sensitivity. Currently, the Tranquillity Solar Project parallels SR 33 for approximately 2 miles. The Adams East Solar Project parallels SR 33 and West Manning Avenue for approximately 0.5mile.

The cumulative projects would add approximately 2 miles of visual industrial elements adjacent to SR 33 to the area in between the existing Tranquillity and Adams East solar projects. The cumulative projects would add approximately 2 to 3 miles of visual industrial elements adjacent to West Manning Avenue, to the east and west of the existing Adams East Solar Project.

The cumulative projects would create a moderate visual contrast along the horizon through the introduction of industrial infrastructure in an otherwise open landscape. The solar panels would follow the existing line along the horizon but would introduce a more distinct and larger linear industrial form. Views from SR 33 and West Manning Avenue adjacent to the cumulative projects would begin to be dominated by the industrial form of the solar panels, power lines

(including those leading to and away from the Tranquillity Switching Station), and other infrastructure elements.

The cumulative projects would partially obstruct views to the west of the Diablo Range in the background. The chain-link fencing surrounding the existing Tranquillity Solar Project and other cumulative projects (such as the yet-to-be-constructed Scarlet and Luna Valley solar projects and the proposed Heartland Hydrogen project) would combine with the aesthetic effects of the Project fencing to alter the visual landscape. With this type of fencing, views across the cumulative projects may be filtered but would not be entirely obstructed. Therefore, the additional solar and industrial facilities would not create a visual tunnel effect. The cumulative projects would increase the scale of visual encroachments and would decrease the quantity of visible open agricultural space, but would not block important visual elements, such as the mountain ranges along the horizon. Given the rate of travel along SR 33 and West Manning Avenue, motorists would pass the additional solar facilities very quickly. Due to the low-profile nature of the PV arrays, these views would quickly diminish from greater distances. Therefore, the cumulative projects would not contribute to visual landscape changes associated with other cumulative projects located at distances over 3 miles from the Project site. The Project's contribution to the visual effect of cumulative projects would introduce a moderate to high level of visual change to the study area. In conjunction with the low-to-moderate visual sensitivity of the landscape, impacts to visual quality resulting from the Project considered with other cumulative projects would be less than significant.

4.2.6 References

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4.3 Agriculture and Forestry Resources

This section identifies and evaluates issues related to Agriculture and Forestry Resources in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping input regarding Agriculture and Forestry Resources (Appendix A, *Scoping Repor*t).

This analysis is based in part on the Project-specific Land Evaluation and Site Assessment (LESA) (Appendix C, *LESA*). The preparers of this Draft EIR independently reviewed the LESA (and other materials prepared by or on behalf of the Applicant) and determined them to be suitable for reliance, in combination with other materials included in the formal record, in the preparation of this Draft EIR.

4.3.1 Setting

4.3.1.1 Study Area

The study area for Agriculture and Forestry Resources includes farmland within Fresno County (including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency), farmland designated as "of local importance" in Fresno County, and forest land and timberland within Fresno County that meets the definitions below. For purposes of the LESA modeling, the study area includes the Project's "zone of influence," which is defined to include the Project site and the surrounding 0.25-mile area.

4.3.1.2 Environmental Setting

Agriculture Resources

As described in Section 2.3.1, *On-site Land Uses,* the Project would be located on land that historically has been either dry-farmed (i.e., not irrigated) for grain cultivation or left fallow over the last 10 years (Appendix C, *LESA*). The land is drainage-impaired, cannot legally be irrigated, and like much of the Westlands Water District's (WWD's) ownership, is subject to elevated salt concentrations that render the property unsuitable for reliable, sustainable agriculture. The Project site is zoned AE-20, Exclusive Agricultural with a minimum lot size of 20 acres (Fresno County 2021a).

The entire Project site has been classified as Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). The parcels adjacent to the Project site also are designated as Farmland of Local Importance, with one (17.8 acre) parcel on the northern boundary designated as Semi-Agricultural and Rural Commercial Land (California Department of Conservation [CDOC] 2020). The off-site portion of the proposed gen-tie line also is located on Farmland of Local Importance, while the existing Tranquillity Switching Station is located on land designated as Urban and Built-up Land.

Definitions of the Department of Conservation's farmland designations are provided in Section 4.3.1.3, *Regulatory Setting*.

None of the parcels that comprise the Project site is subject to a Williamson Act contract (defined below in Section 4.3.1.3, *Regulatory Setting*). One 17.8-acre parcel adjacent to the northern boundary of the Project site is subject to a Williamson Act contract (Appendix C, *LESA*).

Forestry Resources

The Project site does not contain any land defined as forest land (as defined by Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or land zoned Timberland Production (as defined by Government Code Section 51104(g)). No mature trees are located on the Project site (Appendix E1, *Biological Resources Report*). Almost all of the lands available for timber production in Fresno County lie within the southern part of the Sierra National Forest and the northern portion of the Sequoia National Forest (Fresno County 2000).

4.3.1.3 Regulatory Setting

Federal

Britz and Sumner Peck Ranch, Inc. Settlement Agreements with the U.S. Bureau of Reclamation

To provide water to the west side of the San Joaquin Valley, the U.S. Bureau of Reclamation (Reclamation) and the State of California reached an agreement in 1961 for the federal government to construct the San Luis Unit of the Central Valley Project. The WWD is located within the San Luis Unit. As part of the agreement, Congress's authorizing legislation directed Reclamation to collect and dispose of drainage water to address issues associated with poor drainage and disposal of irrigation water in the affected area (WWD 2011).

Reclamation began delivering water to the WWD in 1967. Construction of the water conveyance (drainage) improvements began in 1968 and ended prematurely in 1975 at the Kesterson Reservoir, after only 80 miles of the planned 207 miles of the proposed drainage infrastructure had been completed (Congressional Research Service 2015). In 1983, studies identifying deformity and mortality of waterfowl nesting at the Kesterson Reservoir suggested that these impacts were caused by selenium-laden water coming from soils within the WWD. Reclamation closed the Kesterson Reservoir, capped the drains, and has not provided drainage within the WWD since June 1986. Litigation ensued. (See *Firebaugh Canal Co. v. United States*, Case No. CV-F-88-634 (E.D. Cal.); *Sumner Peck Ranch, Inc. v. Bureau of Reclamation*, Case No. CV-F-91-048 (E.D. Cal.); *Firebaugh Canal Co. v. United States* (9th Cir. 2000) 203 F.3d 568, 571).

In late 2002, the Bureau of Reclamation, WWD, and approximately 100 landowners within WWD boundaries agreed to settle the claims. The Britz settlement agreement resolved claims relating to approximately 3,000 acres and the Sumner Peck Ranch, Inc. settlement agreement resolved claims relating to approximately 34,000 acres (U.S. Bureau of Reclamation 2002). The federal government's September 16, 2015, Notice of Filing of Settlement Agreement in the matter includes

a List of Lands Permanently Retired from Irrigated Agriculture. Irrigation is precluded on the parcels that make up the Project site.

State

California Farmland Mapping and Monitoring Program

The California Department of Conservation's FMMP provides a classification system for farmland based on technical soil ratings and current land use (CDOC 2021). The minimum land use mapping unit is 10 acres unless specified; smaller units of land are incorporated into the surrounding map classifications.

For the purposes of this environmental analysis, the term "Farmland" refers to FMMP map categories Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (hereafter collectively referred to as "Farmland"). Generally, any conversion of land from one of these categories to a lesser quality category or a non-agricultural use would be considered to be an adverse impact. These map categories are defined as follows (CDOC 2021):

> ***Prime Farmland*:** Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
>
> ***Farmland of Statewide Importance*:** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
>
> ***Unique Farmland*:** Farmland of 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 in California. Land must have been cropped at some time during the four years prior to the mapping date.

A fourth category is Farmland of Local Importance, which in Fresno County includes all farmable lands that do not meet the definitions of Prime, Statewide, or Unique. This includes land that is or has been used for dryland farming, irrigated pasture, confined livestock and dairy, poultry facilities, aquaculture and grazing land (CDOC 2018). Farmland of Local Importance is not included in the definition of agriculture within Public Resources Code Section 21060.1; therefore, this category of land is not the focus of the analysis of agriculture and forestry impacts.

California Public Resources Code

The Public Resources Code governs forestry, forests, and forest resources, as well as range and forage lands, within the state. "Forest land" is defined by Public Resources Code Section 12220(g) as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." "Timberland" is defined by Public Resources Code Section 4526 as "land, other than land owned by the federal government..., which is available for, and capable of, growing a crop of trees

of any commercial species used to produce lumber and other forest products, including Christmas trees."

California Government Code

Chapter 6.7 of the Government Code (§§51100-51155) regulates timberlands within the state. "Timberland production zone" is defined in Section 51104(g) as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. In this context, "compatible uses" include any use that "does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber" (Gov't Code §51104(h)). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone."

California Land Conservation Act of 1965

The California Land Conservation Act of 1965 (Williamson Act, Gov't Code §51200 et seq.) preserves open spaces and agricultural land. The Act discourages urban sprawl and prevents landowners from developing their property for the greater land value of commercial and/or residential uses. The Williamson Act is a state program implemented at the county level that allows agricultural landowners to contractually agree to retain land included in an agricultural preserve[1] in agricultural or open space uses for a period of at least 10 years and, in return, to pay reduced property taxes. The term of the contract automatically renews each year unless not renewed or cancelled, so that the contract always has a 10-year period left. The Project is not proposed upon lands subject to a Williamson Act contract.

Local

Fresno County General Plan

The Agriculture and Land Use Element of the General Plan describes land use designations and development standards for unincorporated land within the County, and sets out goals, policies, and programs related to agriculture and land use. The General Plan land use designation for the Project site is Agriculture, which provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities. No overlay designations apply to the Project site (Fresno County 2000). The following General Plan policies and programs apply to the Project:

> ***Policy LU-A.1:*** The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.
>
> ***Policy LU-A.2:*** The County shall allow by right in areas designated Agriculture activities related to the production of food and fiber and support uses incidental and secondary to

[1] An agricultural preserve defines the boundary of an area within which a city or county would be willing to enter into Williamson Act contracts with landowners: The boundary is designated by resolution of the city council or board of supervisors with jurisdiction over the property. Agricultural preserves generally must be at least 100 acres in size.

the on-site agricultural operation. Uses listed in Table LU-3 of the General Plan are illustrative of the range of uses allowed in areas designated Agriculture.

Policy LU-A.3: The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3. Approval of these and similar uses in areas designated Agriculture shall be subject to (a) through (d) of the following criteria:

a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;

b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;

c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (0.25) mile radius;

d. A probable workforce should be located nearby or be readily available;

Criteria e through h relate to the approval of commercial centers, value-added agricultural processing facilities, churches, schools and existing commercial uses and are not applicable to the proposed Project.

Policy LU-A.13: The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.

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.

Program LU-A.E: The County shall continue to implement the County's Right-to-Farm Ordinance, and will provide information to the local real estate industry to help make the public aware of the right-to-farm provisions in their area.

Fresno County Zoning Ordinance

The Project site is zoned AE-20, Exclusive Agricultural with a minimum lot size of 20 acres (Fresno County 2021). As indicated in Section 816.1 of the Fresno County Zoning Code, permitted uses in AE districts include raising livestock, poultry, and plant crops; single-family residences and accessory and farm buildings; and other agricultural and home occupation uses. Electrical transmission and distribution substations are allowed in AE districts subject to approval of a Director Review and Approval application (Section 816.2(D)). Where a project is subject to two or more separate use permits, the County evaluates the entire project under the more-intensive process. Because the Unclassified CUP process is more intensive than the Director Review Approval process, the County is reviewing the proposed substation as part of the Unclassified CUP process for the larger facility. Thus, the substation proposed as part of the Project would not require a separate Director Review Approval.

Fresno County Solar Facility Guidelines

The Fresno County Solar Facility Guidelines (Fresno County 2017) include provisions applicable to the review process for solar facility applications that relate to agricultural resources. For analysis of the Project's consistency with the Solar Facility Guidelines as a whole, see Appendix I-2. Guidelines specific to agricultural resources include:

1. Submission of information regarding historical agricultural use;
2. Submission of information regarding source of water;
3. Identification of current status with respect to Williamson Act, conservation easements, or other similar designation;
4. Identification of soil type and mapping units;
5. Description of measures that will be implemented to create a minimum 50-foot buffer from the edges of the property boundaries to the closest structural improvements or equipment (excluding fencing);
6. A Reclamation Plan detailing the time frame and approach to restoration of the site to agricultural use;
7. Details of efforts to locate the project on non-agricultural land;
8. Development of a Weed and Pest Management Plan; and
9. Acknowledgement of the County's Right to Farm Ordinance.

Fresno County Right-to-Farm Ordinance

For certain activities within 300 feet of an AE Zone District, Section 17.72.075(A) of the Fresno County Code of Ordinances requires the recordation with the Fresno County Recorder of a notice in substantially the following form:

> *FRESNO COUNTY RIGHT-TO-FARM NOTICE*
>
> *It is the declared policy of Fresno County to preserve, protect, and encourage development of its agricultural land and industries for the production of food and other agricultural products. Residents of property in or near agricultural districts should be prepared to accept the inconveniences and discomfort associated with normal farm activities. Consistent with this policy, California Civil Code §3482.5 (right-to-farm law) provides that an agricultural pursuit, as defined, maintained for commercial uses shall not become a nuisance due to a changed condition in a locality after such agricultural pursuit has been in operation for three years.*

In conformance with the Fresno County Solar Facility Guidelines, the Applicant would be required to record such a notice prior to the County's issuance of permits for the Project.

4.3.2 Significance Criteria

The Project would result in significant impacts to agriculture and forestry resources if it would:

a) 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;

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;

c) 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));

d) Result in the loss of forest land or conversion of forest land to non-forest use;

e) 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.

4.3.3 Direct and Indirect Effects

4.3.3.1 Methodology

Examples of direct effects to agriculture and forestry resources include the conversion of agricultural lands to non-agricultural uses and conflicts with existing zoning or agricultural conservation contracts or easements. Indirect effects may include nuisances or other physical changes that may result in the conversion to non-agricultural use or degradation of off-site agricultural lands. To assess potential impacts on agriculture and farmland, the County has considered and relied on the results of Project-specific agricultural LESA modeling (Appendix C, *LESA*), site-specific zoning, and mapping available pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. To assess potential impacts on forest resources, the County considered site zoning, site-specific environmental characteristics, and applicable definitions set forth in state law.

4.3.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in no impact with respect to criteria a), b), c), or d) and a less-than-significant impact with respect to criterion e). The impact conclusions for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would 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.

As described in Section 4.3.1.2, *Environmental Setting,* there is no farmland as shown on the maps prepared pursuant to the FMMP of the California Resources Agency within the Project site boundary. Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use and there would be no impact under this criterion. **(*No Impact*)**

Criterion b) Whether the Project would conflict with existing zoning for agricultural use, or a Williamson Act contract.

The Project would not conflict with the AE-20 zoning designation of the Project site. The proposed uses may be allowed by discretionary approval of an Unclassified Conditional Use Permit (UCUP) on agricultural land in conformance with Fresno County Zoning Code Section 853(B). The Project site is not located on lands subject to a Williamson Act contract and therefore would not conflict with one. Because the Project would not conflict with existing zoning for agricultural use or with a Williamson Act contract, it would cause no impact with respect to significance criterion b). **(*No Impact*)**

Criterion c) Whether the Project would 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).

As described in Section 4.3.1.2, *Environmental Setting*, the Project site does not contain any land defined as forest land (as defined by Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or land zoned Timberland Production (as defined by Government Code Section 51104(g)). The Project site is zoned AE-20 and would continue to be designated as such. Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production and there would be no impact under this criterion. **(*No Impact*)**

Criterion d) Whether the Project would result in the loss of forest land or conversion of forest land to non-forest use.

As described in Section 4.3.1.2, *Environmental Setting*, the Project site does not contain any mature trees, and has historically been either dry-farmed (non-irrigated) for grain cultivation or left fallow. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use and there would be no impact under this criterion. **(*No Impact*)**

Criterion e) Whether the Project would 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.

As described under criteria c) and d), the Project site does not contain any land defined as forest land, timberland, or timberland zoned Timberland Production, does not contain any mature trees, and has historically been used for dryland agricultural uses. Therefore, the construction of a solar energy generating facility, energy storage system, and generation tie-line would not result in the conversion of forest land to non-forest use. There would be no impact to forest resources.

Impact 4.3-1: The Project would involve changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use. (*Less than Significant Impact*)

As discussed in Section 4.3.1.2, *Environmental Setting*, the parcels adjacent to the Project site are designated as Farmland of Local Importance. Farmland of Statewide Importance is located in the general vicinity of the Project site to the west and southeast. Existing solar energy facilities operate nearby, including the adjacent Adams East solar project and the Tranquillity solar project. (Solar and other facilities proposed near the Project site are identified and considered in Section 4.3.4, *Cumulative Effects*). Given the increased demand for renewable energy in California, development of nearby property with a solar facility may encourage other landowners, including those of the adjacent Farmland, to determine that the conversion of some of their land holdings to non-agricultural use is economically feasible. Therefore, indirect conversion of off-site Farmland could potentially occur.

The California Agricultural LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production and/or protected resource land (e.g., Williamson Act contracted lands) more highly than one that has a relatively small percentage of surrounding land in agricultural production. A 0.25-mile zone of influence around a project site is considered for this purpose (CDOC 1997). The LESA prepared for the Project shows that the Project site has a very small percentage of surrounding protected resource land, and that the Project would not have a significant impact on agricultural land use within the Project site and its surrounding zone of influence (Dudek, 2020).

Additionally, only one parcel located at the center north Project site boundary (south of West Adams Avenue east of South Monterey Avenue) within the zone of influence is Williamson Act contracted land (Dudek 2020). This 17.8-acre parcel is not included as part of the Project site and, consistent with Fresno County Solar Guidelines (Appendix I-2), an appropriate buffer would be established to limit impacts to this land.

As noted above, the Project would not convert any Farmland to non-agricultural use on the Project site. In addition, the Project would include measures to limit impacts to adjacent agricultural land uses. In accordance with General Plan Policy LU-A.13 and the Fresno County Solar Facility Guidelines, Project solar panels would be set back a minimum of 50 feet from neighboring agricultural operations. This requirement would be a standard condition of approval

of the conditional use permit application submitted for the Project. Additionally, the Solar Facility Guidelines require that the Project Applicant record a Right-to-Farm Notice with the County Recorder, indicating that the adjacent agricultural operations shall not become a nuisance due to the changed condition of the Project site. The proposed Weed and Rodent Control Plans (copies of which are included in Appendix B) would be implemented during construction and operation to manage the introduction or establishment of invasive or nuisance species during the Project's initial demolition and construction, operation and maintenance, and decommissioning and site restoration. Stormwater and dust control measures such as the stormwater pollution prevention plan (SWPPP), as applicable, and Best Management Practices (BMPs) discussed in Section 2.5.8, *Applicant Proposed Measures and Design Features*, would be employed to manage erosion, sedimentation, and dust created by the Project's construction- and decommissioning-related soil disturbance. These measures would ensure that the Project would have no impact to soils on the Project site or parcels surrounding the Project site. Furthermore, the Project would implement measures during decommissioning to restore the land as described in Appendix B-1, *Reclamation Plan*. The Project would make no other changes to the existing environment (such as those altering soil quality or water availability) that would affect the defining characteristics of off-site Farmland.

The Project would not directly convert any Farmland and would include measures to limit impacts to adjacent agricultural land uses. Therefore, there would be no direct impact and indirect impacts related to potential conversion of Farmland to non-agricultural use off-site would be considered less than significant.

Mitigation: None required.

PG&E Infrastructure

To interconnect the Project with the electrical grid, PG&E would extend an existing 230 kV gen-tie line by up to 0.2 mile and would require an easement to connect to the Project's proposed substation. Construction and operation of the PG&E interconnection infrastructure would result in similar land use changes (but on a much smaller scale) as described for the solar facility. The existing Tranquillity Switching Station and proposed shared gen-tie line are located on land designated as Urban and Built-up Land within the existing Tranquillity Solar Project site. For the same reasons as described above, the PG&E interconnection infrastructure would not convert Farmland to non-agricultural use, and would not conflict with existing zoning for agricultural use or with a Williamson Act Contract, and would have no impact on forest land or timberland, as none is present within the boundaries of the area that would be affected by the PG&E interconnection infrastructure. Accordingly, the PG&E interconnection infrastructure would have no impact related to significance criteria a, b, c, or d. Unlike the Project, construction of the PG&E interconnection infrastructure, if approved, would not have a reasonable possibility of encouraging adjacent landowners to convert their land from a Farmland use to a public utility use. Therefore, the PG&E Infrastructure, as a specific component of the Project as a whole, would result in no direct or indirect impact related to conversion of Farmland to non-agricultural use (criterion e). The combined impacts of the Project and PG&E infrastructure with respect to agricultural resources would be less than significant.

4.3.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Compared to the Project, Alternative 1 would involve a 20-percent smaller overall area of soil disturbance within the boundary identified as the Project site. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Under Alternative 1, the Reduced Acreage Alternative, similar to the proposed Project, there would be a less than significant impact pertaining to the conversion of farmland. Although the scale of impacts to farmland conversion would be reduced under Alternative 1, there would be no change to the significance determination identified in Section 4.3.3.2.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, gen-tie line, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Consequently, this alternative would result in no physical changes in the environment that could result in any impact to Agriculture or Forestry Resources.

4.3.4 Cumulative Analysis

As discussed above, the Project would result in no impact with respect to conversion of Farmland to non-agricultural use, conflict with existing zoning for agricultural use or with Williamson Act contracts, and forest land or timberland. Therefore, the Project could not cause or contribute to any potential significant cumulative impact to these resource areas. The potential for the Project or an alternative to cause or contribute to a potential significant cumulative impact with respect to the remaining Agriculture Resources consideration is evaluated below.

The geographic context for potential cumulative impacts related to other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use is Fresno County. The Project could cause a potential less than significant indirect impact relating to the conversion of Farmland from the initiation of construction through decommissioning and Project site restoration, i.e., a total time period of 37 years.

The term “cumulative impacts” refers to two or more individual effects, which, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from multiple projects is the change in the physical environment that results from the incremental impact of the proposed project when added to other closely-related past, present, and reasonably foreseeable probable future projects. Ongoing impacts of past projects to Agriculture Resources, including Farmland, are reflected in the environmental setting described in Section 4.3.1.2 and specifically include the conversion of agricultural uses to solar facilities as part of the 322-acre Adams East and 3,732-acre Tranquillity solar projects adjacent to and near the Project site. There are other projects under County consideration that, if approved and

constructed, have the potential to cause impacts that could combine with those of the Project to result in an adverse cumulative impact. See Table 4.1-1, *Cumulative Projects List*. For example, the 4,069-acre Scarlet Solar Energy Project adjacent to the south and east of Project site is located on Farmland of Statewide Importance and Farmland of Local Importance (Fresno County 2021b), the 1,300-acre Luna Valley Solar Project adjacent to the west of the Project site is located on Farmland of Local Importance and is adjacent to Farmland of Statewide Importance (CDOC 2020), and the 100-acre Three Rocks Solar Project located approximately 6 miles southwest of the Project site is located on Prime Farmland (CDOC 2020). The proposed Heartland Hydrogen project includes approximately 2,468 acres of solar and 30 acres of hydrogen production facilities at the northern border of the Project site. Some portion of this proposal may include conversion of designated farmland. The Kamm Avenue Pistachio Plant project, noted in Table 4.1.1, was proposed on Farmland of Local Importance and is not located on Prime Farmland (Fresno County 2021c). The proposal is an agricultural use involving no conversion of farmland. Therefore, there would be no cumulative impact to farmland associated with this project. In the context of the farmland conversion trend within Fresno County where urbanization of farmland was primarily attributed to solar development in the western portion of the county, these projects' impacts have caused or contribute to a significant adverse cumulative effect (CDOC, 2016). Accordingly, this EIR considers whether the Project's less-than-significant indirect impact related to potential conversion of off-site farmland to non-agricultural use would be cumulatively considerable. For the reasons discussed below, it would not.

The EIR prepared for the Fifth Standard Solar Project Complex found significant and unavoidable impacts with respect to pressures to convert farmland to non-agricultural use through the precedent-setting conversion of a 1,600-acre Prime Farmland site in favor of solar facilities which would contribute to a cumulative impact on agricultural resources (Fresno County 2020). As the Project would be located solely on Farmland of Local Importance, it would not directly convert any Farmland, in contrast with the Three Rocks Solar Project and Fifth Standard Solar Project Complex, each of which would directly convert Farmland. The conversion of Farmland of Statewide Importance by the Scarlet Solar Project was determined to be less than significant as a result of LESA Model analysis. As discussed under Impact 4.3-1, Farmland in the vicinity of the Project site is protected under Williamson Act contracts, the LESA Model found no significant impact on agricultural land use within the Project's zone of influence, and the Project would include measures to limit impacts to adjacent agricultural land uses. For these reasons, the Project's less than significant indirect impact would not be cumulatively considerable.

4.3.5 References

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4.4 Air Quality

This section identifies and evaluates issues related to air quality in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The County received scoping comments from the San Joaquin Valley Air Pollution Control District (SJVAPCD) pertaining to air quality. SJVAPCD provided various recommendations including that if significant impacts associated with criteria pollutants are identified, the EIR should include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for the Project. The SJVAPCD also recommended that the Project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) that would result from operational and multi-year construction toxic air contaminant (TAC) emissions, including from diesel exhaust, and that if emissions exceed 100 pounds per day of any pollutant, an ambient air quality analysis (AAQA) should be performed (Appendix A, *Scoping Report*). The County reviewed and considered this input in preparing the Draft EIR.

This analysis is based in part on the Project-specific Air Quality and Greenhouse Gas Emissions Analysis Technical Report prepared on the Applicant's behalf (Appendix E-1, *Air Quality and Greenhouse Gas Emissions Analysis Technical Report*). The preparers of this Draft EIR independently reviewed this and other materials prepared by or on behalf of the Applicants and determined them to be suitable for reliance with supplemental information added relative to construction-related water truck trips (Appendix E-2, *Construction Water Truck Emissions*), in combination with other materials included in the formal record, in the preparation of this Draft EIR (ESA 2021).

4.4.1 Setting

4.4.1.1 Study Area

The Project site is located in the San Joaquin Valley Air Basin (Air Basin), which occupies the southern half of California's Central Valley and comprises eight counties: San Joaquin, Stanislaus, Fresno, Merced, Madera, Kings, Tulare, and portions of Kern County. The Air Basin is approximately 250 miles long and 35 miles in width (on average) and is bordered by the Coast Range Mountains on the west, the Sierra Nevada Mountains on the east, and the Tehachapi Mountains to the south. On the valley floor, the Air Basin is open only to the north, which heavily influences prevailing winds (SJVAPCD 2015a). The study area for purposes of this analysis of potential impacts to air quality consists of the Air Basin.

4.4.1.2 Environmental Setting

Topography and Meteorological Conditions

Although marine air generally flows into the Air Basin from the San Francisco Bay Area through the Carquinez Strait (a gap in the Coast Range Mountains) and low mountain passes such as Altamont Pass and Pacheco Pass, the mountain ranges restrict air movement through the Air Basin. Additionally, most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet). These topographic features result in weak airflow and poor dispersion of pollutants and as a result, the Air Basin is highly susceptible to pollutant accumulation.

The average daily maximum and minimum summer temperatures (i.e., July) in unincorporated western Fresno County are 97.9 degrees Fahrenheit (°F) and 63.1 °F, respectively, and the average daily maximum and minimum winter (i.e., January) temperatures are 55.1 °F and 36.3 °F, respectively. Average annual precipitation is 7 inches (WRCC 2021).

Air Pollutants of Concern

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants that are a threat to public health and welfare. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare standards. Criteria pollutants that are a concern in the Air Basin are described below:

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 precursor organic compounds and nitrogen oxides (NO_x). Precursor organic compounds and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately 3 hours.

Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of precursor organic compounds and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with summertime temperature inversions[1] to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone. Exposure to elevated ozone concentrations can cause eye irritation, airway constriction,

[1] "Inversion" means that cool air is trapped beneath warm air. There are two types of inversions. Elevated temperature inversions in summer and fall months acts to cap the mixing depth, limiting the depth of air available for dilution. The inversions typical of winter, called radiation inversions, are formed as heat quickly radiates from Earth's surface after sunset, causing the air in contact with it to rapidly cool. Radiation inversions are strongest on clear, low-wind, cold winter nights, allowing the build-up of such pollutants as carbon monoxide and particulate matter.

and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is an air quality pollutant of concern because it acts as a respiratory irritant. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_x. A precursor to ozone formation, NO_x is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Typically, NO_x emitted from fuel combustion is in the form of nitric oxide (NO) and NO_2. NO is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of the air on high pollution days, especially in conjunction with high ozone levels.

Carbon Monoxide

Carbon monoxide (CO) is a non-reactive 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. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease.

Particulate Matter

Particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$) can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. According to a study by the California Air Resources Board (CARB), exposure to ambient $PM_{2.5}$ can be associated with approximately 7,300 to 11,000 annual premature deaths statewide (CARB 2010). Particulates also can damage materials and reduce visibility. Research has indicated that there are associations between increased levels of ambient particulate matter and increased adverse respiratory health. For PM_{10}, there are positive associations between particulate levels and decreased pulmonary function, increased number of asthma attacks, increased asthma medication usage, increased emergency room visits and hospital admissions for respiratory illness, and increased daily mortality (CARB 2004).

Other Criteria Pollutants

Sulfur dioxide (SO_2) is a combustion product of sulfur or sulfur-containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM_{10} and $PM_{2.5}$) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain. Lead has a range of adverse neurotoxic health effects and was formerly released into the atmosphere primarily via the combustion of leaded gasoline. The use of leaded gasoline ceased in the U.S. after 1995, resulting in decreasing levels of atmospheric lead. Hydrocarbons are organic gases that are formed from hydrogen and carbon, and sometimes other elements. Hydrocarbons that contribute to the formation of ozone are referred to and regulated as reactive organic gases (ROGs). Sources of ROGs include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint. The primary health effects of ROGs result from the formation of ozone and its related health effects.

Toxic Air Contaminants

According to section 39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is "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." CARB has identified 189 substances known to have or may have adverse effects on human health or the environment as TACs. CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM) (17 Cal. Code Regs. §93000) as a TAC in August 1998. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines, including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70 percent of all airborne cancer risk in California is associated with DPM. To reduce the cancer risk associated with DPM, CARB adopted the Diesel Risk Reduction Plan in 2000 (CARB 2000).

Valley Fever

Coccidioidomycosis, more commonly known as "Valley Fever," is an infection caused by inhalation of the spores of the *Coccidioides immitis* fungus, which grows in the soils of the southwestern United States. The spores can be found in some areas naturally occurring in soils, can become airborne when the soil is disturbed, and can subsequently be inhaled into the lungs. Valley Fever symptoms occur within two to three weeks of exposure.

Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. The fungus is very prevalent in the soils of California's San Joaquin Valley, including in Fresno County. Coccidioides is thought to grow best in soil after heavy rainfall and then disperse into the air most effectively during hot, dry conditions.

As a population with more than 20 cases per year of San Joaquin Valley Fever per 100,000 people, Fresno County is considered "highly endemic" (California Department of Industrial Relations [CDIR] 2017a), and western Fresno County is considered an area of elevated Valley Fever activity (Fresno County 2021). In susceptible people and animals, infection occurs

when a *Coccidioides immitis* spore is inhaled. Fungal spores become airborne when soil is disturbed by natural processes such as wind or earthquakes, or by human-induced ground-disturbing activities such as construction and farming.

The Centers for Disease Control and Prevention (CDC) and Fresno County report that farm workers, construction workers, others who engage in soil-disturbing activities, and anyone spending time outdoors in western Fresno County are at risk for Valley Fever (Center for Disease Control and Prevention [CDC] 2021a; Fresno County 2021a, 2021b). High winds can carry dust containing the spores long distances. Most people infected with Valley Fever have no symptoms, but if symptoms develop, they usually occur in the lungs and initially resemble the flu or pneumonia (e.g., fatigue, cough, shortness of breath, chest pain, fever, rash, headache and joint aches). Despite prioritization of Valley Fever research by the National Institutes of Health and the Centers for Disease Control and Prevention, including millions of dollars in grant funding research (The Daily Independent 2018), no vaccine to protect humans from Valley Fever currently exists (CDC 2021b). Valley Fever is not contagious, and secondary infections are rare. On average, there were approximately 200 Valley Fever-associated deaths each year (deaths in which Valley Fever was listed as a primary or contributing cause on a death certificate) in the United States between 1999 and 2019 (CDC 2021a). The number of cases of Valley Fever in Fresno County has varied over the past several years. Between 2011 and 2014, the total number of cases decreased from 724 to 156. In 2016, the number of total cases spiked to 601, from 267 cases reported the previous year in 2015. Those most at risk of developing severe symptoms include Hispanics, African Americans, Filipinos, pregnant women, adults of older age groups, and people with weakened immune systems (CDC 2021b). Valley Fever can also affect canines (potentially including the San Joaquin kit fox, a federally- and state-listed species), cats, horses, and other animals (Merck Sharp & Dohme Corp. 2018).

Existing Air Quality

The SJVAPCD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants. Existing and probable future levels of air quality in the Air Basin can be inferred from ambient air quality measurements conducted by SJVAPCD at its monitoring stations. The major criteria pollutants of concern in the Central Valley (i.e., ozone, PM_{10}, and $PM_{2.5}$) are monitored at multiple locations and associated air quality data statistics are posted online by CARB. Background ambient concentrations of pollutants are determined by pollutant emissions in a given area and topography and meteorological conditions for that area. As a result, background concentrations can vary among different locations within Fresno County. However, areas located close together with similar topography and exposed to similar wind conditions can be expected to have similar background pollutant concentrations. The closest SJVAPCD monitoring station to the Project site is the Tranquillity monitoring station at 32650 West Adams Avenue, which is located just north of the Project site across West Adams Avenue and which monitors ozone and $PM_{2.5}$. The closest station that measures PM_{10} and NO_2 concentrations is the Fresno-Drummond monitoring station located more than 30 miles east of the Project site. For the purposes of this analysis, these measurements were considered representative of the air quality conditions in the vicinity of the Project. CO and SO_2 concentrations no longer exceed health-

based standards within California and CARB no longer post air quality data statistics online for those pollutants.

Table 4.4-1 shows a 5-year summary of ozone and $PM_{2.5}$ data collected at the Tranquillity monitoring station and PM_{10} and NO_2 data collected at the Fresno-Drummond monitoring station. The table also compares this data to the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS), which are presented in more detail in **Table 4.4-2**. As shown in Table 4.4-1, the state and national 8-hour ozone standards, the national 24-hour $PM_{2.5}$ standard, and the state 24-hour and annual average PM_{10} standards have been exceeded on multiple days between 2016 and 2020. The State annual average $PM_{2.5}$ standard was not exceeded during the 5-year period from 2016 through 2020.

TABLE 4.4-1
AIR QUALITY DATA SUMMARY (2016-2020) FOR THE PROJECT AREA

Pollutant	Standard	Monitoring Data by Year				
		2016	2017	2018	2019	2020
Ozone						
Highest 1-Hour Average, ppm		0.093	0.087	0.088	0.079	0.087
Days over State Standard	0.09 ppm	0	0	0	0	0
Highest 8-Hour Average, ppm		**0.081**	**0.076**	**0.083**	0.071	**0.079**
Days over State/National Standards [a]	0.070 ppm	19	10	7	3	3
Fine Particulate Matter, PM2.5						
Highest 24-Hour Average, µg/m^3		**39.7**	**62.4**	**94.5**	20.3	**146.2**
Measured days over National Standard Exceedances/Samples[b]	35 µg/m^3	2	6	16	0	21
Annual Average, µg/m^3		7.7	8.3	11.1	5.8	11.4
Exceed State Standards?	12 µg/m^3	No	No	No	No	No
Particulate Matter, PM_{10}						
Highest 24-Hour Average		**86.3**	**120.5**	**154.8**	**181.3**	**349.2**
Measured Days over State Standard [b]	50 µg/m^3	17	17	19	13	25
Measured Days over National Standard [b]	150 µg/m^3	0	0	0	1	1
State Annual Average	20 µg/m^3	**38.0**	**44.2**	**45.7**	**39.6**	**NA**
Nitrogen Dioxide, NO_2						
Highest 1-Hour Average		0.059	0.065	0.076	0.042	0.067
Days over State Standard	0.18 ppm	0	0	0	0	0
Days over National Standard	0.100 ppm	0	0	0	0	0
State/National Annual Average	0.030/0.053 ppm	NA	NA	0.013	NA	NA

NOTES:

Generally, state standards are not to be exceeded and national standards are not to be exceeded more than once per year. Values in bold are in excess of applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter; NA = Not Available.

a In October 2015, the USEPA implemented a new national 8-hour ozone standard of 70 ppb (or 0.070 ppm).

b Measurements of $PM_{2.5}$ are usually collected every 1 to 3 days. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

SOURCE: CARB 2021

TABLE 4.4-2
AMBIENT AIR QUALITY STANDARDS AND AIR BASIN ATTAINMENT STATUS

Pollutant	Averaging Time	State Standard		National Standard	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8-Hour	0.070 ppm	Non-attainment	0.070 ppm	Non-attainment/ Extreme
	1-Hour	0.090 ppm	Non-attainment/ Severe	--	--
Carbon Monoxide	1-Hour	20 ppm	Attainment/ Unclassified	35.ppm	Attainment/ Unclassified
	8-Hour	9.0 ppm		9 ppm	
Nitrogen Dioxide	1-Hour	0.18 ppm	Attainment	0.100 ppm	Attainment/ Unclassified
	Annual	0.030 ppm		0.053 ppm	
Sulfur Dioxide	1-Hour	0.25 ppm	Attainment	0.075 ppm	Attainment/ Unclassified
	24-Hour	0.04 ppm	--	0.14 ppm	
	Annual	--	--	0.030 ppm	
Respirable Particulate Matter (PM_{10})	24-Hour	50 $\mu g/m^3$	Non-attainment	150 $\mu g/m^3$	Attainment
	Annual	20 $\mu g/m^3$		--	--
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	--	Attainment	35 $\mu g/m^3$	Non-attainment
	Annual	12 $\mu g/m^3$	Non-attainment	12.0 $\mu g/m^3$	Attainment
Lead	30-Day	1.5 $\mu g/m^3$	Attainment	--	--
	Quarterly	--	--	1.5 $\mu g/m^3$	No Designation/ Classification

NOTES:
ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter.
SOURCE: SJVAPCD 2021.

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include age, pre-existing health condition, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly and infirm persons are more susceptible to respiratory distress and other air quality-related health problems compared to the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. The SJVAPCD considers hospitals, schools, parks, playgrounds, daycare centers, nursing homes, convalescent facilities, and residential areas as sensitive receptor land uses (SJVAPCD 2015a).

The nearest sensitive receptors are scattered rural residences in the vicinity of the Project site, primarily adjacent to portions of the northern site boundaries. One of the two closest sensitive

receptors to the Project site is located at the southeast corner of the intersection of W. Adams Avenue and S. Monterey Avenue. This residence is approximately 50 feet east of S. Monterey Avenue (which may be used for construction access) and 185 feet from the Project site boundary. The other closest sensitive receptor is a residence located approximately 185 feet north of the Project site boundary, on the north side of W. Adams Avenue, approximately 2,000 feet east of SR 33. There is also a cluster of residences located on the south side of West Dinuba Avenue at the southeast corner of South Derrick Avenue and West Dinuba Avenue. These residences are located approximately 1 mile from the southernmost portion of the southern site boundary.

4.4.1.3 Regulatory Setting

Criteria Air Pollutants. Regulation of air pollution is achieved through both NAAQS and CAAQS and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act, the USEPA has identified criteria pollutants and has established NAAQS to protect public health and welfare. NAAQS have been established for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. To protect human health and the environment, the USEPA has set "primary" and "secondary" maximum ambient standards for each of the criteria pollutants. Primary standards were set to protect human health, particularly for sensitive individuals such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants. Table 4.4-2 presents both sets of ambient air quality standards (i.e., national and state) and the Air Basin's attainment status for each standard. California also has established CAAQS for sulfates, hydrogen sulfide, and vinyl chloride.

As shown in Table 4.4-2, the Air Basin currently is classified as non-attainment for the 1-hour state ozone standard as well as for the federal and state 8-hour ozone standards. The Air Basin is also designated as non-attainment for the state annual average and national 24-hour $PM_{2.5}$ standards. Additionally, the Air Basin is classified as non-attainment for the state 24-hour and annual average PM_{10} standard. The Air Basin is unclassified or classified as attainment for all other pollutants standards (SJVAPCD 2021).

Federal

The USEPA is responsible for implementing the programs established under the federal Clean Air Act, such as developing and reviewing the NAAQS and judging the adequacy of State Implementation Plans (SIPs), but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

The 1970 Clean Air Act (last amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants are planned to be controlled in order to achieve all

standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an ample margin of safety) to which the public can be exposed without adverse health effects. They are designed in consideration of those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards without observing adverse health effects. The current attainment status for the Air Basin, with respect to NAAQS, is summarized above and identified in Table 4.4-2.

State

CARB is responsible for establishing and reviewing the state standards, compiling the California SIP and securing approval of that plan from USEPA, conducting research and planning, and identifying TACs. CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality management districts, which are organized at the county or regional level. Air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their jurisdictional areas and for preparing the air quality plans that are required under the federal Clean Air Act and California Clean Air Act.

Although the Federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California already had established its own air quality standards when the NAAQS were established, and because of the unique meteorological problems in California, there is considerable diversity between the state and national ambient air quality standards, as shown in Table 4.4-2. Most of the California ambient standards are at least as protective as national ambient standards and some are more stringent. In 1988, California passed the California Clean Air Act (Health and Safety Code §39600 et seq.), which, like its Federal counterpart, requires the designation of areas as attainment or non-attainment, but based these designations on CAAQS rather than the NAAQS. The current attainment status for the Air Basin, with respect to CAAQS, is summarized above and identified in Table 4.4-2.

Toxic Air Contaminants. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources, but does not directly regulate air toxics emissions. Under the Act, TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment and, if specific thresholds are violated, are required to communicate the results to the public in the form of notices and public meetings. Depending on the risk levels, emitting facilities are required to implement varying levels of risk reduction measures. The SJVAPCD implements AB 2588 through its Integrated Air Toxic Program and is responsible for prioritizing facilities that emit air toxics, reviewing health risk assessments, and implementing risk reduction procedures. Pursuant to the requirements of AB 2588, the SJVAPCD publishes an air toxics emissions inventory that details the TAC emissions of facilities throughout the Air Basin (SJVAPCD 2017a).

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation was designed to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, On-Road Heavy Duty (New) Vehicle Program, In-Use Off-Road Diesel Vehicle Regulation, and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment Several Airborne Toxic Control Measures reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 Cal. Code Regs. §2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 Cal. Code Regs. §2025).

Valley Fever. On October 11, 2019, Assembly Bill (AB) 203 was published to add Section 6709 to the Labor Code, relating to occupational safety and health. This bill requires construction employers engaging in specified work activities or vehicle operation in counties where Valley Fever is highly endemic, as defined, to provide effective awareness training on Valley Fever to all employees annually and before an employee begins work that is reasonably anticipated to cause substantial dust disturbance. The bill requires the training to cover specific topics and authorizes the training to be included in the employer's injury and illness prevention program training or as a standalone training program. The training shall include all of the following topics:

- What Valley Fever is and how it is contracted;
- High risk areas and types of work and environmental conditions during which the risk of contracting Valley Fever is highest;
- Personal risk factors that may create a higher risk for some individuals;
- Personal and environmental exposure prevention methods;
- The importance of early detection, diagnosis, and treatment to help prevent the disease from progressing;
- Recognizing common signs and symptoms of Valley Fever;
- The importance of reporting symptoms to the employer and seeking medical attention from a physician and surgeon for appropriate diagnosis and treatment; and
- Common treatment and prognosis for Valley Fever.

Local

San Joaquin Valley Air Pollution Control District

The Project site is located within the jurisdiction of the SJVAPCD, which regulates air pollutant emissions for all sources throughout the Air Basin other than motor vehicles. The SJVAPCD administers permits governing stationary sources. In addition to administering permits, SJVAPCD enforces the following rules, regulations, and plans that would apply to the Project:

Regulation VIII (Fugitive PM_{10} Prohibitions)

Regulation VIII contains rules developed pursuant to USEPA guidance for serious PM_{10} non-attainment areas. Rules included under this regulation limit fugitive dust PM_{10} 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 4.4-3** contains requirements that the Project would be subject to in order to comply with SJVAPCD Rule 8021 and **Table 4.4-4** contains control measures that would be required to be implemented during Project construction activities pursuant to Rule 8021, *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*.

Rule 2201 (Visibility)

Rule 2201 provides for review of new and modified stationary sources of air pollution, such as the proposed emergency generator and provides mechanisms including emission trade-offs that Authorities to Construct permit sources may be granted, without interfering with the attainment or maintenance of ambient air quality standards. No net increase in emissions are permitted above specified thresholds from new and modified stationary sources of all non-attainment pollutants and their precursors.

Rule 4101 (Visibility)

Rule 4101 limits the visible plume from any source to 20 percent opacity.

Rule 4102 (Nuisance)

Rule 4102 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).

Rule 4601 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)

The purpose of Rule 4641 is to limit 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.

TABLE 4.4-3
SJVAPCD RULE 8021 NON-ADMINISTRATIVE MEASURES AND NOTIFICATION REQUIREMENTS APPLICABLE TO THE PROJECT

No.	Measure
5.2	A person shall control the fugitive dust emissions to meet the requirements in [SJVAPCD] Table 8021-1 [shown below as Table 4.4-4].
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 visible dust emissions 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.
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 prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 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 Air Pollution Control Officer has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the Air Pollution Control Officer 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 Air Pollution Control Officer 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.
6.3.6	A Dust Control Plan shall contain all of the following information: 6.3.6.1 Name(s), address(es), and phone number(s) of person(s) and owner(s)/operator(s) responsible for the preparation, submittal, and implementation of the Dust Control Plan and responsible for the dust generating operation and the application of dust control measures. 6.3.6.2 A plot plan which shows the type and location of each project. 6.3.6.3 The total area of land surface to be disturbed, daily throughput volume of earthmoving in cubic yards, and total area in acres of the entire project site. 6.3.6.4 The expected start and completion dates of dust generating and soil disturbance activities to be performed on the site. 6.3.6.5 The actual and potential sources of fugitive dust emissions on the site and the location of bulk material handling and storage areas, paved and unpaved roads; entrances and exits where carryout/trackout may occur; and traffic areas. 6.3.6.6 Dust suppressants to be applied, including: product specifications; manufacturer's usage instructions (method, frequency, and intensity of application); type, number, and capacity of application equipment; and information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application. 6.3.6.7 Specific surface treatment(s) and/or control measures utilized to control material carryout, trackout, and sedimentation where unpaved and/or access points join paved public access roads. 6.3.6.8 At least one key individual representing the owner/operator or any person who prepares a Dust Control Plan must complete a Dust Control Training Class conducted by the District. The District will conduct Dust Control Training Classes on an as needed basis.

SOURCE: SJVAPCD 2004

TABLE 4.4-4
SJVAPCD CONTROL MEASURE OPTIONS FOR CONSTRUCTION, EXCAVATION, EXTRACTION, AND OTHER EARTH MOVING ACTIVITIES

Letter/No.	Measure
A	**Pre-Activity**
A1	Pre-water site sufficient to limit visible dust emissions to 20 percent opacity.
A2	Phase work to reduce the amount of disturbed surface area at any one time.
B	**During Active Operations**
B1	Apply water or chemical/organic stabilizers/suppressants sufficient to limit visible dust emissions to 20 percent opacity; or
B2	Construct and maintain wind barriers sufficient to limit visible dust emissions to 20 percent opacity. If using wind barriers, control measure B1 above shall also be implemented.
B3	Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit visible dust emissions to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.
C	**Temporary Stabilization During Periods of Inactivity**
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.

SOURCE: SJVAPCD 2004, Table 8021-1

In addition to reducing a portion of a development project's impact on air quality through compliance with District Rule 9510, a developer can further reduce the project's impact on air quality by entering into a "Voluntary Emission Reduction Agreement" (VERA) with the SJVAPCD to address the mitigation requirements under CEQA. Under a VERA, a developer may fully mitigate project emission impacts by providing funds to the SJVAPCD, which then are used by SJVAPCD to administer emission reduction projects on behalf of the project proponent (SJVAPCD 2015b). Emission reduction projects funded by the VERA program include replacement of older equipment such as tractors for small-scale agriculture and other small business operations and buses for school districts where equipment replacement would be otherwise prohibitively expensive. To determine emissions reductions credited to the VERA, the SJVAPCD tracks each piece of equipment purchased with the VERA funds and the emissions reductions anticipated from the use of that equipment compared to the replaced older equipment. Those direct reductions are then credited to the VERA. No reductions are credited to the VERA until replacement equipment has been purchased with VERA funds.

Air Quality Management Plans

As required by the federal and California Clean Air Acts, air basins or portions thereof have been classified as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the standards have been achieved. Jurisdictions of non-attainment areas also are required to prepare an air quality management plan that includes strategies for achieving attainment. The SJVAPCD has approved air quality management plans demonstrating how the

Air Basin will reach attainment with the federal 1-hour and 8-hour ozone, PM_{10}, and $PM_{2.5}$ and California CO standards.

Ozone Attainment Plans

The *Extreme 1-Hour Ozone Attainment Demonstration Plan*, adopted by the SJVAPCD Governing Board October 8, 2004, set forth measures and emission-reduction strategies designed to attain the federal 1-hour ozone standard by November 15, 2010. The 1-hour ozone standard was subsequently revoked by USEPA in June of 2005. The *2013 Plan for the Revoked 1-Hour Ozone Standard* was approved by the Governing Board on September 19, 2013 (SJVAPCD 2013) to attain the 1-hour ozone standard by 2017. On July 18, 2016, the USEPA published in the Federal Register the final action to determine that the Air Basin has attained the 1-hour ozone standard.

The *2007 Ozone Plan,* approved by CARB on June 14, 2007, demonstrates how the Air Basin would meet the federal 8-hour ozone standard. The *2007 Ozone Plan* includes a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the Air Basin. Additionally, this plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution, and an increase in State and federal funding for incentive-based measures to create adequate reductions in emissions to bring the entire Air Basin into attainment with the federal 8-hour ozone standard (SJVAPCD 2007).

On April 16, 2009, the SJVAPCD Governing Board adopted the *Reasonably Available Control Technology Demonstration for Ozone State Implementation Plans* (SJVAPCD 2009). With respect to the 8-hour standard, the plan assesses the SJVAPCD's rules based on the adjusted major source definition of 10 tons per year (due to the Air Basin's designation as an extreme ozone non-attainment area), evaluates SJVAPCD rules against new Control Techniques Guidelines promulgated since August 2006, and reviews additional rules and amendments adopted by the Governing Board since August 17, 2006, for reasonably available control technology consistency.

SJVAPCD adopted the *2016 Plan for the 2008 8-Hour Ozone Standard* in June 2016. This plan satisfies Clean Air Act requirements and ensures expeditious attainment of the 75 parts per billion 8-hour ozone standard (SJVAPCD 2016a).

On May 19, 2020, the Governing Board adopted the *2020 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone Standard* (SJVAPCD 2020) that includes a demonstration that the SJVAPCD rules implement Reasonably Available Control Technology (RACT). The plan reviews each of the NO_x reduction rules and concludes that they satisfy requirements for stringency, applicability, and enforceability, and meet or exceed RACT.

Particulate Matter Attainment Plans

Effective November 12, 2008, USEPA re-designated the Air Basin as an attainment area with respect to the PM_{10} NAAQS and approved the *2007 PM_{10} Maintenance Plan* (USEPA 2008).

In April 2008, the SJVAPCD Board adopted the *2008 $PM_{2.5}$ Plan* (SJVAPCD 2008) and subsequently approved amendments on June 17, 2010. This plan was designed to address USEPA's annual $PM_{2.5}$ standard of 15 µg/m³, which was established by USEPA in 1997.

In April 2015, the SJVAPCD Board adopted the *2015 Plan for the 1997 $PM_{2.5}$ Standard* that addresses the USEPA's annual and 24-hour $PM_{2.5}$ standards established in 1997 after the Air Basin experienced higher $PM_{2.5}$ levels during the 2013/2014 winter due to the extreme drought, stagnation, strong inversions, and historically dry conditions, and the SJVAPCD was unable to meet the initial attainment date of December 31, 2015 (SJVAPCD 2015c).

SJVAPCD adopted the *2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard* on September 15, 2016. This plan addresses the updated USEPA federal annual $PM_{2.5}$ standard of 12 µg/m^3, established in 2012. This plan includes an attainment impracticability demonstration and a request for reclassification of the Air Basin from Moderate non-attainment to Serious non-attainment (SJVAPCD 2016b).

The *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards* was adopted on November 15, 2018, and utilizes extensive science and research, state-of-the-art air quality modeling, and the best available information in developing a strategy to attain the federal health-based 1997, 2006, and 2012 standards for $PM_{2.5}$. The Plan consists of a combination of innovative regulatory and non-regulatory measures including aggressive incentive-based control measures that achieve the emissions reductions needed to bring the area into attainment (SJVAPCD 2018).

Fresno Council of Governments

The Fresno Council of Governments (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 serves as the federally designated metropolitan planning organization (MPO) for Fresno County. With respect to air quality planning and other regional issues, FCOG has prepared the 2018-2042 Regional Transportation Plan (2018 RTP) for the region (FCOG 2018). The 2018 RTP is a problem-solving guidance document that directly responds to what FCOG has learned about Fresno County's challenges through the annual State of the Region report card. The 2018 RTP addresses greenhouse gas emissions reductions and other air emissions related to transportation, with the goal of preparing for future growth in a sustainable manner through the year 2042. It contains a variety of different elements or chapters with each element augmented by additional documentation.

The eight Valley Metropolitan Planning Organizations (MPOs) and the SJVAPCD employ a Memorandum of Understanding (MOU) to ensure a coordinated transportation/air quality planning approach. The MOU defines a cooperative process aimed at maximizing effectiveness and compatibility for both air quality and transportation plans. It also facilitates compliance with the federal Clean Air Act's air quality conformity provisions. The Regional Transportation Plan recognizes the importance of state and federal air quality planning regulations.

Interagency consultation is generally conducted through the San Joaquin Valley Regional Planning Agencies Interagency Consultation Group (IAC), formerly the San Joaquin Valley Model Coordinating Committee. The IAC was established by the Regional Planning Agencies' Director's Association to provide a coordinated approach to air quality in the Air Basin, conformity, and transportation modeling issues. The IAC's goal is to ensure Air Basin-wide coordination, communication, and compliance with Federal and state Clean Air Act requirements. Each of the eight MPOs and the SJVAPCD are represented. In addition, the Federal Highway Administration, Federal Transit Administration, USEPA, CARB, and California Department of Transportation (Districts 6, 10 and headquarters) are all IAC members. Since preparation of the 2014 RTP, the IAC has coordinated the unified approach among all the agencies to successfully adopt the 2012 $PM_{2.5}$ SIP completed three separate transportation conformity determinations, and played a major role in coordinating the 2018 RTP among the eight counties.

The Short-Range Improvement Plan provides actions that will reduce air emissions between 2018 and 2022. As indicated in the needs assessment sections of the 2018 RTP, the majority of short-term measures improving air quality are related to system, demand, and control management strategies.

The 2018 RTP's policies work to protect the region's air quality and build on the short-range program's successes, on both federal and California air quality policies and mandates, and on available funding. Long-term strategies are those that are often aimed at changing attitudes and behavior toward new and alternate transportation systems and fuels, alternative means of commuting to work, and land-use changes over time. The air quality attainment and energy conservation goals, objectives, and policies stress concerted efforts toward supporting alternative transportation modes, including better bicycle and pedestrian systems and upgrading existing public transit and regional rail facilities. The long-range strategies will continue to implement Transportation Control Measures, Transportation System Management and Transportation Demand Management.

Fresno County

The Fresno County General Plan contains the following air quality policies aimed at reducing air emissions from development projects, such as the Project (Fresno County 2000):

> ***Policy OS-G.13:*** 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 SJVUAPCD's [now known as SJVAPCD] particulate matter of less than ten (10) microns (PM_{10}) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.
>
> ***Policy OS-G.14:*** 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.

4.4.2 Significance Criteria

The Project would result in significant impacts to air quality if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

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;

c) Expose sensitive receptors to substantial pollutant concentrations;

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

In addition to the air quality criteria above from Appendix G of the CEQA Guidelines, SJVAPCD's Guidance for Assessing and Mitigating Air Quality includes one additional criterion. Consistent with SJVAPCD's Guidance, the Project would be considered to result in a significant impact to air quality if it would:

e) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

For the evaluation of significance, the Guidance for Assessing and Mitigating Air Quality Impacts has established emissions-based thresholds of significance for criteria air pollutants (SJVAPCD 2015a), which are shown in **Table 4.4-5**. The SJVAPCD recommends that lead agencies evaluate the significance of construction and operational impacts separately and provide separate significance thresholds for construction emissions and emissions from operational permitted and non-permitted equipment and activities. The operational thresholds of significance are relative to calendar-year, although construction emissions are assessed on a rolling 12-month period.

TABLE 4.4-5
SJVAPCD AIR QUALITY THRESHOLDS OF SIGNIFICANCE – CRITERIA AIR POLLUTANTS

Pollutant	Construction Emissions (tons per year)	Operational Emissions (tons per year)	
		Permitted Equipment & Activities	Non-Permitted Equipment & Activities
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

SOURCE: SJVAPCD 2015a

In addition to the annual mass emissions thresholds described in Table 4.4-5, the SJVAPCD has also established screening criteria to determine if a project would result in a CO hotspot at

affected roadway intersections (SJVAPCD 2015a). If neither of the following criteria are met at any of the intersections affected by the Project, it would result in no impact related to the potential to create a violation of the CO standard:

- A traffic study for the project indicates that the level of service (LOS) on one or more streets or at one or more intersections in the project vicinity would be reduced to LOS E or LOS F.
- A traffic study indicates that the project would substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

The SJVAPCD also recommends that an Ambient Air Quality Analysis (AAQA) be performed when on-site emissions of any criteria pollutant would equal or exceed 100 pounds per day (SJVAPCD 2014). If emissions of one criteria pollutant or an ozone precursor exceed the threshold, then the criteria pollutants and precursors listed in Table 4.4-5 are to be modeled. In the AAQA, air pollutant concentrations are estimated by conducting air dispersion modeling, then the resulting concentrations are added to ambient background levels and compared to the applicable ambient air quality standard. The Project would be considered to have a significant impact if its emissions are estimated to cause or contribute to a violation of an ambient air quality standard by exceeding any CAAQS or NAAQS. If an exceedance of the CAAQS or NAAQS is predicted, modeled concentrations may be compared to significant impact levels (SILs) to assess whether the Project's emissions would contribute significantly to an existing violation of the CAAQS or NAAQS.

The SJVAPCD has established health risk thresholds of significance for combined TAC emissions from the operations of both permitted and non-permitted sources (SJVAPCD 2015a). Projects that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the maximally exposed individual equals or exceeds 20 in 1 million people.
- Hazard Index for acute and chronic non-carcinogenic TACs equals or exceeds 1 for the maximally exposed individual.

As described in the Guidance for Assessing and Mitigating Air Quality Impacts, due to the subjective nature of odor impacts, SJVAPCD does not have adopted quantitative thresholds to determine if potential odors would have a significant impact (SJVAPCD 2015a).

The SJVAPCD identifies some common types of facilities that are known to produce substantial odors and provides recommended screening distances between those odor sources and receptors. Odor sources identified by the SJVAPCD include wastewater treatment facilities, sanitary landfills, transfer stations, composting facilities, petroleum facilities, asphalt batch plants, chemical and fiberglass manufacturing facilities, painting/coating operations, food processing facilities, feed lots/dairies, and rendering plants. The recommended screening distance is 1 mile between the odor sources and receptors, except for wastewater treatment facilities and petroleum facilities for which a screening distance of 2 miles is recommended (SJVAPCD 2015a). Because the Project would not include one or more of the identified odor sources, odor impact that would be associated with the Project are assessed qualitatively.

4.4.3 Direct and Indirect Effects

4.4.3.1 Methodology

To determine the significance of Project impacts on air quality, emissions from construction, operation and maintenance, and decommissioning activities were estimated and compared to significance thresholds recommended in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a). Detailed emission estimates and calculations for the Project are included in the Air Quality and Greenhouse Gas Emissions Analysis Technical Report, a copy of which is provided in Appendix E-1, and the Construction Water Truck Emissions, which are included in Appendix E-2.

The study area is classified as a non-attainment area for the 1-hour state ozone standard as well as for the federal and state 8-hour ozone standards. The Air Basin also is designated as non-attainment for the state annual average and national 24-hour $PM_{2.5}$ standards. Additionally, the Air Basin is classified as non-attainment for the state 24-hour and annual average PM_{10} standard. Therefore, the SJVAPCD has adopted CEQA thresholds of significance for ROG, NOx, PM_{10}, and $PM_{2.5}$ for both short-term construction and long-term project operations as identified in Table 4.4-5, above. Although SO_2 and CO concentrations in the Air Basin are attainment of standards or unclassified, the SJVAPCD has also adopted CEQA thresholds of significance for SO_x and CO. The SJVAPCD has determined that an exceedance of these thresholds indicates that a project would cumulatively jeopardize attainment of ambient air quality standards. An exceedance of the standards would result in a significant adverse cumulative impact on air quality.

Construction

Project construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. CalEEMod contains default data specific to each California air basin and quantifies direct emissions from construction and operation (including on-road vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. CalEEMod uses EMFAC and OFFROAD emission factors to estimate emissions from on-road vehicles and off-road equipment, respectively. To estimate the emissions reductions that would be associated with the Project's required compliance with SJVAPCD Rule 9510, the Sacramento Metropolitan Air Quality Management District's Construction Mitigation Program, Version 8.0, was used. Project construction was modeled to commence in January and would last 15 months; therefore, emissions generated during the first calendar year of construction represent emissions associated with the maximum rolling 12-month period for the Project.

Construction scenario assumptions, including phasing, equipment used within each phase, and the number of construction vehicle trips, were based on information provided by the Applicant. The details of data, assumptions, and calculations used to determine Project construction emissions are included in Appendix E. The Applicant anticipates that grading and ground disturbance at the site would be balanced and no import or export of soil would be required. Project construction is estimated to require a maximum of 350 workers per day during peak construction, resulting in 700 worker vehicle one-way trips per day. Following the preparation of the Air Quality and

Greenhouse Gas Emissions Analysis Technical Report, the Applicant determined that 300 acre-feet of water would be needed for construction instead of the previously assumed 62 acre-feet. The Project description includes onsite water use (from a new or existing well) or offsite water use (by delivery of water to the site). The technical report does not include "water truck" as an on-site equipment type and does not indicate if the emissions estimates assume water truck trips would be required to deliver 62 acre-feet of water for construction. Therefore, as a conservative approach, preparers of this Draft EIR estimated the criteria pollutant emissions that would be associated with the proposed truck transport of all 300 acre-feet of water to the Project site (see Appendix E-2) and combined those emissions with the previously estimated emissions presented in Appendix E-1.

Operation

Operational emissions including area, energy, and mobile source emissions also were estimated using CalEEMod. Area sources include use of architectural coatings such as paints and primers to maintain the Operations and Maintenance (O&M) building, which result in ROG off-gassing from the evaporation of solvents. These emissions were calculated in CalEEMod based on the ROG emission factor for the solvents, the surface area of the O&M building and default model assumptions for the reapplication rate. Energy sources include electricity usage at the O&M building and on-site generation from the proposed diesel-powered emergency generator. No natural gas would be used on site. Operation of the emergency generator would be limited to 50 hours per year for testing and maintenance per CARB's Air Toxics Control Measures for Stationary Compression Ignition Engines. Because electricity used during operations would be generated on-site by the proposed solar PV system, no on-site emissions would be generated associated with electricity use. Mobile sources would include motor vehicles (e.g., automobiles or light duty trucks) traveling to and from the site for monthly or annual maintenance. Based on conservative estimates, the Project is expected to generate up to 22 one-way trips per day during operation, accounting for the commutes by seven full-time employees and water deliveries. Water would be transported to the site for use during panel washings. If offsite water is needed, tt is anticipated that up to five 5,000-gallon water trucks would be required for panel washing every 4 years. In addition, potable water for the seven full-time employees would be delivered to the site. It is conservatively estimated that there would be four trucks traveling to the site per day for water deliveries and maintenance activities. The details of data, assumptions, and calculations used to estimate Project-related operational emissions are included in Appendix E.

Decommissioning

Once the Project has reached the end of its lifetime, it would be decommissioned in accordance with the provisions of a final reclamation and site restoration plan, a draft of which is provided in Appendix B-1, Reclamation Plan. At that time, all equipment and on-site Project structures would be removed and the site would be returned to a condition comparable to its pre-Project state. Similar to the construction phase, decommissioning would be temporary. Once decommissioning activities are completed, all Project-related on-site activity and emissions would cease.

Decommissioning activities would generate air pollutants from on-site sources (e.g., off-road equipment and soil disturbance) and off-site sources (e.g., on-road haul trucks, vendor trucks, and

worker vehicle trips). Decommissioning scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the Applicant. Decommissioning is anticipated to last approximately 6 months and begin after the Project's 30-year lifespan.

Health Risk Assessment

A health risk assessment (HRA) was conducted for Project construction emissions following the methodologies prescribed in the Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments of the California Environmental Protection Agency/Office of Environmental Health Hazard Assessment's (OEHHA) (OEHHA 2015). Since operational activities would be limited to routine inspection and maintenance and periodic emergency generator testing, a quantitative HRA was not performed for operations.

Dispersion of DPM emissions was modeled using AERMOD, a USEPA approved dispersion model. A full receptor grid of discrete Cartesian receptors extending up to 2 kilometers surrounding the Project site was conservatively used. For risk assessment purposes, PM_{10} in diesel exhaust is considered DPM, originating mainly from off-road equipment. For the construction HRA modeling, DPM from diesel-fueled off-road construction equipment and trucks was the only TAC evaluated.

The concentrations modeled using AERMOD were then used as input into the CARB Hot Spots Analysis and Reporting Program Version 2 (HARP2). HARP2 (ADMRT, version 19121) is a software suite used to assist with the requirements of the Air Toxics "Hot Spots" Program (AB 2588) and incorporates the health risk parameters of the latest version of OEHHA Air Toxics Hot Spot Risk Assessment guidelines (OEHHA 2015). The resulting health risks were then compared to the SJVAPCD thresholds. The details of data, assumptions, and calculations used to determine Project-related construction health risks are included in Appendix E.

4.4.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact for all criteria. The impact conclusions for that subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would conflict with or obstruct implementation of the applicable air quality plan.

Impact 4.4-1: Criteria pollutant emissions generated by Project construction would conflict with the SJVAPCD's air quality plans. (*Less than Significant Impact*)

Construction, operation and maintenance, and decommissioning and site restoration activities associated with the Project would result in emissions of criteria pollutants and ozone precursors such as ROG and NO_x as well as particulate matter, pollutants for which the Air Basin is designated as non-attainment. The SJVAPCD has prepared several air quality attainment plans to achieve ozone and particulate matter standards, the most recent of which include the *2020*

Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan, *2013 Plan for the Revoked 1-Hour Ozone Standard*, *2007 PM_{10} Maintenance Plan and Request for Redesignation, 2012 $PM_{2.5}$ Plan*, *2015 Plan for the 1997 $PM_{2.5}$ Standard*, and *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards*. The Air Basin is in attainment for CO, SO_2, and lead, so there are no air quality plans for those pollutants.

The SJVAPCD has determined that projects that generate emissions below the thresholds of significance for criteria pollutants and ozone precursors would not conflict or obstruct implementation of the applicable SJVAPCD air quality plans (SJVAPCD 2015a). A project would not conflict or obstruct a SJVAPCD air quality plan if it complies with all applicable SJVAPCD rules and regulations, complies with all applicable proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan) (SJVAPCD 2015a).

The Project would be required to comply with applicable SJVAPCD rules and regulations, such as Regulation VIII (Fugitive PM_{10} Prohibitions) and Rule 9510 (Indirect Source Review), which are summarized in Section 4.4.1.3, *Regulatory Setting*. The Project would not conflict with existing land uses or result in population growth. In addition, the Project would result in a minor increase in long-term trips that would have a negligible increase in overall VMT in the area. Haul truck, vendor truck, and worker vehicle trips that would be generated during the proposed construction activities would be short-term and cease after construction is completed, then additional trips would occur during decommissioning at the end of the Project life span. As discussed under Impact 4.4-2 below, maximum annual emissions generated during Project construction and decommissioning would not exceed the SJVAPCD's annual thresholds, resulting in a less-than-significant impact associated with a potential conflict with the SJVAPCD's ozone reduction plans.

During the longer-term operational phase, the Project would have routine inspection and maintenance activities that would result in a net increase in emissions although, as discussed under Impact 4.4-3, the increase in emissions would not exceed any significance threshold or violate any SJVAPCD rule or regulation. Implementation of the Project would not exceed the demographic growth forecasts in FCOG's Regional Transportation Plan (RTP) / Sustainable Communities Strategy (SCS) (FCOG 2018) and would be consistent with the SJVAPCD Attainment Plans for PM_{10}, $PM_{2.5}$, or ozone. Based on these considerations, operation and maintenance activities associated with the Project would not conflict with or obstruct implementation of the SJVAPCD's air quality plans, and the associated impact would be less than significant.

Mitigation: None required**.**

Criterion b) Whether the Project would 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.

Criterion e) Whether the Project would violate any air quality standard or contribute substantially to an existing or projected air quality violation (SJVAPCD threshold).

Impact 4.4-2: Construction and decommissioning activities associated with the Project would generate emissions that could contribute to violations of ambient air quality standards. (*Less than Significant Impact*)

Construction and decommissioning activities associated with the Project are described in detail in Sections 2.5.5 and 2.5.7 of the Project Description, respectively, and would both generate emissions of criteria air pollutants and ozone precursors.

Construction

Construction activities are anticipated to occur over a period of approximately 15 months. Project construction would consist of grading and site preparation followed by above-ground facility construction, including component assembly and electrical interconnection.

Grubbing and grading would occur at the site to achieve the required surface conditions. Because the site is already mostly flat, grading would be minimal. The site's cut and fill would balance, and no importing or exporting of fill or cut materials would be necessary. Water for dust control and other construction needs would come from on-site wells or would be trucked to the site. This assessment conservatively assumes water would be trucked to the site. The Project would comply with SJVAPCD Rule 8021 to control fugitive dust emissions generated during grading activities as an independent obligation of the Project owner enforceable by the SJVAPCD. SJVAPCD Rule 8021 measures that would apply to the Project are listed in Table 4.4-3.

Maximum annual Project construction emissions as estimated using CalEEMod and annual emissions with Rule 9510 compliance as estimated using the Construction Mitigation Program are summarized in **Table 4.4-6** and compared to the SJVAPCD's annual construction thresholds.

As shown in Table 4.4-6, maximum annual Project construction emissions of ROG, CO, SO_x, PM_{10}, and $PM_{2.5}$ would not exceed the applicable significance thresholds; however, NO_x emissions generated during Project construction would exceed the NO_x threshold.

TABLE 4.4-6
MAXIMUM ANNUAL CONSTRUCTION EMISSIONS

Max. Rolling 12 Month Period	Annual Emissions (tons per year)					
	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
Annual Project Emissions (not including water truck-related emissions)	1.4	11.4	10.7	0.05	7.3	1.3
Water Truck Emissions	<0.1	0.6	0.3	<0.1	<0.1	<0.1
Total Annual Emissions	1.4	12.0	11.0	<0.1	7.3	1.3
Significance Threshold	10	10	100	27	15	15
Exceeds Threshold?	No	**Yes**	No	No	No	No
Total Annual Emissions with Rule 9510 Compliance	NA	**9.7**	NA	NA	7.2	NA
Significance Impact?	NA	No	NA	NA	No	NA

NOTE:
NA = not applicable.
SOURCE: Table 7 of Appendix E-1 and Appendix E-2

In addition, per the requirements of SJVAPCD Rule 9510, exhaust emissions from construction equipment greater than 50 horsepower must be mitigated to 20 percent below the statewide average NOx emissions and 45 percent below statewide average PM_{10} exhaust emissions. As shown in Table 4.4-6, implementation of SJVAPCD Rule 9510 would result in emissions reductions that would reduce overall NOx emissions to below the significance threshold, resulting in a less-than-significant impact.

In addition to the annual significance thresholds, the SJVAPCD also recommends the use of daily emissions for the evaluation of project impacts on localized ambient air quality. The SJVAPCD recommends that an AAQA be performed for the criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of any enforceable mitigation measures. **Table 4.4-7** shows maximum daily emissions that would be associated with construction of the Project.

TABLE 4.4-7
MAXIMUM DAILY ON-SITE CONSTRUCTION EMISSIONS

	Maximum Daily Emissions (pounds per day)					
	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
On-site Emissions (not including water truck-related emissions)	6.9	71.6	65.0	0.1	82.9	10.1
Water Truck Emissions	<0.1	0.5	0.2	<0.1	<0.1	<0.1
Total On-site Emissions	6.9	72.1	65.2	0.1	82.9	10.1
AAQA Screening Threshold	100	100	100	100	100	100
Exceeds AAQA Threshold?	No	No	No	No	No	No

SOURCE: Table 7a of Appendix E-1

As shown in Table 4.4-7, maximum daily on-site construction emissions would not exceed SJVAPCD's localized screening threshold of 100 pounds per day for any of the pollutants analyzed. Therefore, completion of an AAQA is not required for the Project.

If a new underground well is installed as part of the Project, the well would likely be excavated before ground disturbance activities (e.g., site preparation, grading, and trenching) occur for the solar facility, so that the onsite water could be used for dust suppression during the ground distance activities. Construction equipment necessary to install the well, such as a drill rig, crane, grader or dozer, and delivery/service trucks, would total considerably fewer pieces of equipment than needed for the ground disturbance activities. Since the well installation equipment would operate before the other construction activities and the amount of equipment needed for well installation would be substantially less than the combined equipment needed for the other construction phases, including the other equipment that would be needed during the final 3 months of the 15-month construction period, the emissions associated with the well construction activities would not likely factor into or increase the maximum rolling 12-month annual construction emissions presented in Table 4.4-6. Similarly, since emissions from well construction equipment would not occur simultaneously with the emissions from the other solar

facility construction equipment, the Project would not exceed the maximum daily emissions shown in Table 4.4-7. Additionally, if onsite water is used from a new or existing well, then most of the water truck emissions would be avoided since water truck delivery would not be required. Approximately 10% of estimated water truck emissions would still occur from water trucks delivering water from the well to locations onsite (Appendix E-3). Even if emissions from well construction are generated, by avoiding most of the mobile emissions from water truck delivery, construction of the Project would continue to have a less-than-significant impact to Air Quality.

Decommissioning

The Project is expected to be operational for an expected life of 30 years. It is possible that the life of the Project could be extended beyond 30 years through maintenance of existing equipment or with equipment replacement and with further County review and approval. However, for this analysis, Project operations at the site are assumed to be terminated and the facility to be decommissioned after 30 years.

Maximum annual emissions associated with Project decommissioning, as estimated using CalEEMod are summarized in **Table 4.4-8** and compared to the SJVAPCD's short-term annual construction significance thresholds. As shown in Appendix E, decommissioning emissions were assumed to occur in the year 2054 but were calculated for the year 2050, the farthest year allowed to be modeled in CalEEMod. Therefore, this represents a conservative analysis for emissions as equipment and vehicle fleet efficiencies would be expected to increase from year 2050 to year 2054 and decommissioning emissions in 2054, or when decommissioning actually occurs, may be lower than shown in Table 4.4-8. The Project would comply with SJVAPCD Rule 8021 to control fugitive dust emissions generated during any grading activities as an independent obligation of the Project owner enforceable by the SJVAPCD.

TABLE 4.4-8
MAXIMUM ANNUAL DECOMMISSIONING EMISSIONS

Max. Rolling 12 Month Period	Unmitigated Annual Emissions (tons per year)					
	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
2054	0.4	2.6	3.9	0.02	3.7	0.6
Significance Threshold	10	10	100	27	15	15
Significant?	No	No	No	No	No	No

SOURCE: Table 8 of Appendix E-1

As shown in Table 4.4-8, maximum annual decommissioning emissions of all pollutants analyzed would be well below the SJVAPCD significance thresholds and the associated impact would be less than significant.

Impact Summary

For the determination of whether Project emissions would violate any ambient air quality standard, the SJVAPCD recommends that an ambient air quality analysis be performed when emissions of any criteria pollutant or ozone precursor would equal or exceed any applicable annual threshold of significance or 100 pounds per day.

Violation of ambient air quality standard is largely a cumulative impact. The Air Basin is a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$ NAAQS and/or CAAQS. The nonattainment status of regional pollutants is a result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emission sources from past and present development. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. With the required implementation of SJVAPCD Rule 9510, construction emissions associated with the Project would not exceed the SJVAPCD significance thresholds for criteria pollutants and ozone precursors. Accordingly, the Project would result in a less than-significant increase in emissions of nonattainment pollutants. Therefore, 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.

In addition, as shown in Table 4.4-7, on-site emissions associated with Project construction would not exceed 100 pounds per day; maximum daily emissions associated with decommissioning are expected to be even lower. Thus, an AAQA would not be required and emissions from Project construction and decommissioning are not expected to violate any air quality standard or contribute substantially to an existing or projected air quality violation at the Project site boundary.

Mitigation: None required.

Impact 4.4-3: Operation and maintenance activities associated with the Project would generate emissions that would not contribute to violations of ambient air quality standards. (*Less than Significant Impact*)

Operation of the Project would result in a renewable energy resource that would generate very limited direct emissions of air pollutants. On-site emissions of criteria pollutants associated with Project operation would result from solvent emissions from periodic application of paints and primers to the O&M building and periodic testing and maintenance of the emergency generator at the proposed substation. Off-site emissions would be generated by employee and maintenance vehicle trips as well as trucks carrying potable water and water used for periodic washing of the PV panels. Project operational emissions were estimated using CalEEMod. **Table 4.4-9** presents the maximum annual operational emissions in tons per year with a comparison to SJVAPCD significance thresholds, as well as the maximum daily emissions in pounds per day with a comparison to the SJVAPCD's AAQA screening thresholds. Detailed emissions calculations are provided in Appendix E.

TABLE 4.4-9
MAXIMUM ANNUAL PROJECT OPERATIONAL EMISSIONS

Estimated Emissions	Annual Emissions (tons per year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Project Total	0.05	0.3	0.2	<0.01	0.13	0.04
Significance Thresholds	10	10	27	100	15	15
Exceeds Threshold?	No	No	No	No	No	No
Estimated Emissions	**Maximum Daily Emissions (pounds per day)**					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Project Total	0.25	1.3	1.0	0.01	0.55	0.15
AAQA Screening Thresholds	100	100	100	100	100	100
Exceeds Threshold?	No	No	No	No	No	No

SOURCE: Table 9 of Appendix E-1, EDPR 2021

As summarized in Table 4.4-9, operation and maintenance of the Project would generate emissions that would be below the SJVAPCD significance thresholds and the AAQA screening thresholds. If onsite water is used to supply the O&M building and for period PV panel washing, then offsite water truck delivery would not be required, and the emissions shown in Table 4.4-9 would be lower.

Thus, an AAQA would not be required, and emissions from Project operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

As shown in Table 4.4-9, maximum annual emissions associated with Project operation would not exceed the SJVAPCD significance thresholds for criteria pollutants. Accordingly, the Project would result in a less-than-significant impact associated with the increase in emissions of nonattainment pollutants. Therefore, consistent with SJVAPCD guidance, 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.

Mitigation: None required.

Criterion c) Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

Impact 4.4-4: The Project could expose sensitive receptors to substantial pollutant concentrations. (*Less than Significant Impact*)

Air quality varies as a direct function of the quantity of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems leading to health impacts arise when the rate of pollutant emissions exceeds the rate of dispersion. As discussed earlier, some land uses are considered more sensitive to changes in air

quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by CARB, include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. One of the closest sensitive receptors to the Project site is located at the southeast corner of the intersection of W. Adams Avenue and S. Monterey Avenue. This residence is approximately 50 feet east of S. Monterey Avenue (which may be used for construction access) and 185 feet east of the Project site boundary. Another sensitive receptor close to the Project site is a residence approximately 185 feet north of the Project site boundary, on the north side of W. Adams Avenue, approximately 2,000 feet east of SR 33.

Health Impacts of Toxic Air Contaminants

Health impacts associated with TACs are generally associated with long-term exposure. Minimal emissions are expected on-site from routine maintenance, periodic PV panel washing activities, and periodic emergency generator testing, and off-site from employee and water truck trips to the Project site each day. There are no meaningful sources of TACs associated with the operating phase of the Project; therefore, operational health impacts related to TACs would be less than significant. The greatest potential for health risk impacts from exposure to TAC emissions would be during construction and decommissioning activities: specifically, emissions from heavy equipment operation and heavy-duty trucks. A health risk assessment was prepared to assess these sources and is included in Appendix E-1.

The Project would result in a short-term increase of TAC emissions related to construction. The main TAC of concern for the Project is DPM from diesel combustion, which has been listed as a TAC by the CARB. Because DPM is the TAC emitted in the largest quantity, it is used as a surrogate for other TACs within diesel exhaust.

Construction of the Project would require use of heavy-duty construction equipment and diesel trucks would be used to transport equipment and materials to and from the Project site. Both construction equipment and diesel trucks are subject to CARB Airborne Toxics Control Measures to reduce DPM emissions. DPM emissions from Project construction would be limited to the 15-month construction period. Following completion of construction activities, Project-related TAC emissions associated with heavy-duty construction equipment and diesel trucks would cease. An HRA was conducted that included analysis of one of the two closest sensitive receptors to the Project site off W. Adams Avenue; however, since both of the closest sensitive receptors are at a distance of 185 feet from the Project site boundary and are in the general vicinity off W. Adams Avenue, the findings of the HRA are considered applicable to both of the closest sensitive receptors. The incremental health risks to these receptors from Project construction are summarized in **Table 4.4-10**.

TABLE 4.4-10
CONSTRUCTION ACTIVITY HEALTH RISK ASSESSMENT RESULTS

Impact Parameter	Units	Project Impact	SJVAPCD CEQA Threshold	Exceeds Threshold?
Maximum Individual Cancer Risk – Residential	Per Million	0.95	20	No
Chronic Hazard Index	unitless ratio	0.001	1.0	No

SOURCE: Appendix E-1, Table 11

As shown in Table 4.4-10, the health risks to the closest receptor of the Project from exposure to DPM emissions from construction would be less than the SJVAPCD 20-in-a-million significance threshold for cancer risk and chronic health index significance threshold of 1. It should be noted the HRA did not incorporate the water trip emissions described in Tables 4.4-6 and 4.4-7; however, those emissions would not be expected to have a substantial effect on the HRA because they are minor in comparison to the rest of the Project emissions, and most of the water truck emissions would be generated off-site, associated with transporting the water to the Project site. Therefore, the Project construction TAC health risk impact would be less than significant. DPM emissions from Project decommissioning would be lower than Project construction and therefore would generate even lower health risks than shown in Table 4.4-10.

Therefore, Project construction, operation, and decommissioning activities would not expose sensitive receptors to substantial pollutant concentrations of TACs. This impact would be less than significant.

Health Impacts of Carbon Monoxide

Exposure to high concentrations of CO can result in dizziness, fatigue, chest pain, headaches, and impairment of central nervous system functions. The Air Basin is currently an attainment area for CO; however, there is a potential for the formation of microscale CO "hotspots" to occur immediately around points of congested traffic. Hotspots can form if such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and/or is operating on roadways crowded with non-project traffic.

As discussed earlier, the SJVAPCD's Impact Assessment Guide uses the Level of Service (LOS) approach to screen for intersections and streets that could experience CO hotspots. Because ambient CO concentrations in the Project area are well below the NAAQS and CAAQS, it is unlikely that the addition of Project construction traffic would lead to exceedances of the standards. The traffic analysis for the Project does not include an evaluation of LOS for roadway segments and intersections, and instead analyzes the Project's transportation impacts based on vehicle miles traveled, consistent with new CEQA guidelines from the Office of Planning and Research. However, the addition of less than 300 Project construction-related daily trips to roadway segments and intersections in the Project vicinity where existing ambient concentrations of CO are below standards is not likely to cause an exceedance of the standard. Based on CO modeling conducted by the South Coast Air Quality Management District for some of the busiest intersections in the South Coast Air Basin, with an average daily traffic (ADT) volume of about 100,000 vehicles per day and using CO emission factors for 2002, the peak modeled CO 1-hour concentration was estimated to be 4.6 ppm. Existing ADT in the Project vicinity ranges from 187 on West Adams Avenue to 1,790 on SR 33. The addition of Project construction and decommissioning traffic would not result in potential CO hotspots and associated health effects to receptors. This impact would be less than significant. Project-related operational traffic would add up to 22 trips per day and therefore result in a less-than-significant impact with respect to potential for CO hotspots.

Health Impacts of Other Criteria Air Pollutants

The health effects that are associated with emissions of criteria pollutants are described in the *Air Pollutants of Concern* discussion in Section 4.4.1.2. As described in the Criteria Air Pollutants discussion in Section 4.4.1.3, *Regulatory Setting*, compliance with the ambient air quality standards indicates that regional air quality can be considered protective of public health. The ambient air quality standards are expressed in terms of the concentrations of individual pollutants within the air. With certain exceptions, given current air quality modeling tools, calculating an individual project's effect on ambient pollutant concentrations does not yield information that is accurate enough to be useful. Writing as amicus curiae in *Sierra Club v. County of Fresno*, the SJVAPCD explained that "[t]he health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the National Ambient Air Quality Standards (NAAQS). Accordingly, while the type of individual facility/health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task" (SJVAPCD 2015d). Instead, the SJVAPCD explained that it assesses a project's potential to exceed NAAQS by evaluating the project's compliance with district thresholds of significance, which are measured in mass emissions (SJVAPCD 2015d).In addition, for projects that produce emissions for 2 years or less, this analysis is not meaningful because quantities of emissions are too small to have a statistically significant effect on health outcomes. An exception is for fine particulate matter from diesel exhaust. Concentrations of particulate matter exhaust from diesel-fueled equipment and vehicles can be used as a proxy for diesel particulate matter in a health risk assessment, which is a separate type of air quality analysis from the other criteria pollutants discussed herein (see the *Health Impacts of Toxic Air Contaminants*, above).

Ozone, however, is a regional pollutant for which project-specific concentration modeling is not reliable given current modeling limitations. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases and given the state of environmental science modeling in use at this time, it is infeasible to convert Project-related specific mass emissions levels (i.e., weight) of NO_x or ROGs emitted in a particular area to a particular concentration of ozone in that area (SJVAPCD 2015d). Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone (South Coast AQMD 2015; SJVAPCD 2015d). Furthermore, available models are designed to determine regional, population-wide health impacts, from long-term emission sources and cannot accurately quantify ozone-related health impacts caused by NO_x or ROG emissions from the local level, and in particular not at the level of this individual project's construction emissions that last for less than 2 years.

Project-level mass (weight) emission thresholds have been established for ozone precursors (NO_x and ROG), PM_{10}, and $PM_{2.5}$ because it is typically not possible to readily convert mass emissions at the project level to regional pollutant concentrations. The SJVAPCD's mass emission thresholds for ROG, NO_x, and PM_{10} are tied to the offset requirements for ozone precursors and PM_{10} because the Air Basin is not in attainment with ozone, PM_{10}, and $PM_{2.5}$ standards and therefore such an approach is appropriate to identify potential to cause further deterioration of ambient air quality, which would be a regionally cumulative significant impact. As explained

above, attainment can be considered protective of public health, thus providing a strong link between SJVAPCD's mass emission thresholds and avoidance of health effects.

As discussed under Impacts 4.4-2 and 4.4-3, construction, operation, and decommissioning of the Project would not result in emissions that exceed the SJVAPCD's annual emissions thresholds for any of the air pollutants with required implementation of SJVAPCD Rule 9510. Further, maximum daily emissions would be below the screening threshold for an AAQA and hence would not contribute to local exceedances of the NAAQS or the CAAQS. These standards are established at health protective levels and include an adequate margin of safety. Therefore, NO_x emissions from Project construction would not be anticipated to result in an adverse health effect with respect to emissions of NO_x or ozone.

Specific ROGs may be categorized TACs; however, ROGs are not expected to present risk of health impacts from construction and decommissioning activities, which are largely conducted using equipment and trucks powered by diesel engines that have substantially fewer ROG emissions than gasoline powered motor vehicles. Potential health risks from DPM emissions generated by diesel equipment and trucks, discussed above, far outweigh the risks associated with ROG. Some ROGs would be associated with motor vehicles and construction equipment, while others are associated with architectural coatings, the emissions of which would not result in the exceedances of the SJVAPCD's significance thresholds or AAQA screening thresholds as shown in Tables 4.4-6, 4.4-7, 4.4-8 and 4.4-9. Additionally, the Project would comply with SJVAPCD Rule 4601, which restricts the ROG content of coatings for both construction and operational applications. Therefore, ROG emissions from Project construction would not be anticipated to result in an adverse health effect with respect to emissions of ROG or ozone.

As discussed under Impacts 4.4-2 and 4.4-3, construction, operation, and decommissioning of the Project would not exceed significance thresholds or AAQA screening thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter including fugitive dust. Because the Project would not exceed thresholds for PM_{10} or $PM_{2.5}$ during construction, operation, and decommissioning, health impacts related to particulate matter would be less than significant.

A quantitative health impact assessment (HIA) has not been prepared because the results of an HIA would be unlikely to reasonably inform decision-makers or members of the public of any causal link between changes in criteria pollutant concentrations associated with the Project and any specific individual health impact. While the HRAs analyze the correlation between localized $PM_{2.5}$ concentrations and human health effects, substantial scientific uncertainty remains regarding a clear link between cause and effect of other criteria air pollutants in a regional context. Uncertainty stems from the limitations of epidemiological studies, including inadequate exposure estimates, difficulty in identifying root health cause and effect, and the inability to control for many factors (including lifestyle factors like smoking or exposures to other air pollutants) that could explain the association between exposure to emissions and adverse health impacts. Further, for both the $PM_{2.5}$ and ozone health effects calculated in an HIA, each of the pollutants may amplify the health impact of the others. Due to these uncertainties, there is a high

likelihood that modeled health effects, identified in an HIA, would not be reliably predictive of the actual future health effects of the Project. In addition, as noted above, with the required implementation of Rule 9510, the Project's emissions would not exceed SJVAPCD's thresholds, indicating that emissions would also have less-than-significant health impacts. This is also confirmed by the fact that as shown in Table 4.4-7, maximum daily on-site construction emissions would not exceed SJVAPCD's localized screening threshold of 100 pounds per day for any of the pollutants analyzed therefore not needing an AAQA for the Project. While it would be possible to rely on modeling software like BenMAP-CE, AERMOD, and other models, to calculate potential outcomes, the County has not done so based on a determination that the results would not advance the information about the health impacts of Project emissions.

Mitigation: None required.

Criterion d) Whether the Project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impact 4.4-5: The Project could generate odor or dust emissions. (*Less than Significant Impact*)

Odors

Odors would be generated from vehicles' and equipments' exhaust emissions during construction and decommissioning of the Project. Odors produced during construction and decommissioning would be attributable to concentrations of unburned hydrocarbons from tailpipes of heavy-duty equipment. Odors generated during Project construction and decommissioning activities would be temporary and localized and would not carry over beyond the Project site boundaries. Therefore, odors associated with construction would not result in nuisance to sensitive receptors or any surrounding land uses, and the associated impact would be less than significant.

During Project operation, the Project would not introduce any potential sources of odors beyond the use of vehicles for routine inspection and maintenance and temporary testing of the emergency generator. Operation and maintenance activities would be minimal and would not result in substantial odors. Therefore, operational impacts associated with odors would also be considered less than significant.

Dust

Major sources of dust that would be associated with the Project would include fugitive dust stirred up by vehicles traveling on roads, dust from construction, and windblown dust from open lands. Dust generated from construction can vary substantially from day to day depending on the prevailing weather conditions. Construction of the Project would generate fugitive dust stirred up by vehicles traveling on roads and construction activities, as well as emissions from off-road equipment and construction vehicles. Entrained dust would also result from the exposure of unpaved surfaces to wind from the direct disturbance and movement of soil,

resulting in PM_{10} and $PM_{2.5}$ emissions. As discussed in Impact 4.4-2, maximum annual construction emissions would not exceed the SJVAPCD annual significance thresholds for PM_{10} or $PM_{2.5}$, which are designed to identify the potential to cause deterioration of ambient air quality that could affect public health.

The Project would be required to comply with SJVAPCD Rule 8021 to control dust emissions generated during grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include: watering of the active sites to maintain acceptable levels of dust generation, covering haul trucks, and minimizing grading and soil movement when winds exceed 30 miles per hour. In addition, Regulation VIII would require the Applicant to prepare a Dust Control Plan, and all applicable control measures would be fully implemented. Therefore, dust impacts during Project construction and decommissioning would be less than significant.

Mitigation: None required.

Impact 4.4-6: Project construction and decommissioning activities could expose sensitive receptors to risk of contracting Valley Fever. (*Less than Significant Impact*)

Construction activities that include ground disturbance can result in fugitive dust, which can cause fungus *Coccidioides* spores to become airborne if they are present in the soil. The fungus grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. In susceptible people and animals, infection occurs when a spore is inhaled.

Workers who disturb soil where fungal spores are found, whether by digging, operating earth-moving equipment, driving vehicles, or by working in dusty, wind-blown areas, are more likely to breathe in spores and become infected. Valley Fever is not a contagious disease, and secondary infections are rare. Most cases of Valley Fever are mild and symptoms generally occur within 3 weeks of exposure. It is estimated that 60 percent or more of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention. However, in about 5 percent of cases, Valley Fever spreads outside the lungs to affect other body parts (e.g., joints, bones, brain, skin, or other organs) and, in extreme cases (usually among patients with compromised immune systems), can cause death. It is estimated that more than 4 million people live in areas where Valley Fever fungus is prevalent in the soils (University of Arizona 2021), including western Fresno County.

Given the endemic nature of the disease and the amount of earthmoving activities in the County relating to agricultural activities; grading and excavation for new residential, commercial, and industrial development; and surface mining operations, it is typically not possible to attribute a specific case of Valley Fever to a specific earthmoving activity. However, it is likely that much of the population (human and wildlife) of Fresno County has already been exposed to Valley Fever as a result of historic and ongoing earthmoving activities and current levels of fugitive dust throughout the region. Such ground-disturbing activities represent a continual source of spores that contribute to the low number of Valley Fever cases reported each year (Fresno County 2021a). Construction and decommissioning activities associated with the Project would result in similar localized ground disturbing activities to those that occur continually within the County.

The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) regulates workplace safety to protect workers, including by requiring respiratory protection (29 CFR §1910.134). The relevant standards are provided in OSHA Publication 3079, Respiratory Protection (OSHA 2002). California, under an agreement with OSHA, operates an occupational safety and health program in accordance with Section 18 of the Occupational Safety and Health Act of 1970. The Department of Industrial Relations administers the California Occupational Safety and Health Program, commonly referred to as Cal/OSHA. Under state law, employers must "establish, implement and maintain an effective injury illness and protection plan" that includes "a system for ensuring that employees comply with safe and healthy work practices," "a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health," "procedures for identifying and evaluating work place hazards," "a procedure to investigate occupational injury or occupational illness," "methods and/ or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures," and "training and instruction" (8 Cal. Code Regs. §3203).

Because inhalation is the primary pathway for Valley Fever infection, workers who disturb soil where fungal spores are found are most likely to breathe in spores and become infected. Accordingly, requirements for respiratory protection (29 CFR §1910.134) would be particularly applicable. California's Department of Industrial Relations enforces these laws on solar energy construction sites (CDIR 2017b).

Because ground disturbance in the County is ongoing and the Project would implement fugitive dust control measures consistent with Rule 8021, and because independently enforceable protections of worker safety and health are in place, the risk is low that fugitive dust generated by the Project would cause substantial adverse effects on human beings. Implementation of the required fugitive dust control measures such as those identified in Tables 4.4-3 and 4.4-4 would ensure that fugitive dust that could contain *Coccidioides immitis* spores would be appropriately controlled. In addition, the Project would be required to comply with the awareness training and other administrative requirements of AB 203 (Labor Code §6709) relating to occupational safety and health. This would ensure that Valley Fever-related impacts to humans and animals would be less than significant.

Mitigation: None required.

PG&E Infrastructure

As described in Chapter 2, *Project Description*, energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Tranquillity Switching Station via an extension of an existing 230 kV gen-tie line. According to the Project construction schedule, which is provided in Appendix E, emissions from the new transmission poles constructed by PG&E would happen concurrently with the rest of the Project and are included in the emissions estimates for the Project shown in Tables 4.4.-1 and 4.4-2. No additional vehicle trips (workers or trucks) would be needed to operate and maintain or to decommission PG&E infrastructure that have not already been accounted for in the discussion of Project operation and maintenance and decommissioning impacts above. Therefore, the impacts on air quality discussed under Impacts 4.4-1 through 4.4-6, above, for the Project also would include impacts from the

PG&E infrastructure component of the Project and implementation of SJVAPCD Rule 9510 would also be required to reduce NOx emission levels that would be applicable to the PG&E infrastructure. Impacts from construction activities associated with the PG&E infrastructure and the combined impacts of the Project and PG&E infrastructure would be less than significant.

4.4.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Alternative 1 would involve development of a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 340 acres and the remaining on-site acreage would remain vacant. A smaller overall area of soil disturbance would result in a corresponding decrease in fugitive dust emissions, compared to the Project. Similarly, because a smaller project (under Alternative 1) could require less equipment use or a shorter construction period, it could reduce the Project's associated equipment and vehicle emissions.

Regarding criteria a), b), and e), although impacts would occur on a reduced scale under Alternative 1, similar impacts to those identified in Section 4.4.3 would occur. The Reduced Acreage Alternative would not conflict with or obstruct implementation of the applicable air quality plan, would not have the potential to result in a cumulatively considerable net increase of any criteria pollutant, or violate ambient air quality standards. Regarding criteria c) and d), although fewer overall emissions could be generated under the Reduced Acreage Alternative, locally, the emissions concentrations would likely be similar to that of the Project, and the impacts relative to exposing sensitive receptors to substantial pollutant concentrations and/or odors during construction and decommissioning would be the same as the Project, less than significant. With implementation of SJVAPCD Rule 9510 requirements, air quality impacts would be less than significant.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, or related facilities would be delivered to the Project site or constructed, operated, maintained, or decommissioned there. No construction equipment would be operated and no additional vehicle trips would be made to, from, or within the site relative to baseline conditions, and therefore, no emissions would be generated. Ground clearance or disturbance would not occur for any Project purpose. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to air quality.

4.4.4 Cumulative Analysis

The geographic scope considered for potential cumulative impacts to air quality is the Air Basin, which is governed by the SJVAPCD. The Air Basin currently is classified as non-attainment for the 1-hour State ozone standard as well as for the federal and State 8-hour ozone standards. Additionally, the Air Basin is classified as non-attainment for the State 24-hour and annual arithmetic mean PM_{10} standards and the State annual arithmetic mean and national 24-hour $PM_{2.5}$ standards (SJVAPCD 2021). Therefore, there is an existing adverse cumulative impact in the Air Basin relative to these pollutants.

The contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and reasonably foreseeable future projects in the study area also have contributed or will contribute to adverse regional air quality conditions on a cumulative basis. None of the single projects in the cumulative scenario, by itself, would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions. While a significant cumulative air quality impact exists in non-attainment regions exceeding the state and/or federal standards, the project-level thresholds for criteria air pollutants are based on levels at which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. As Project construction emissions would be below SJVAPCD thresholds with implementation of Rule 9510, the Project's incremental contribution to the cumulative impact in the region would not be considered cumulatively considerable. Additionally, as discussed above, the Project would not conflict with or obstruct implementation of SJVAPCD's air quality plans. Therefore, the Project construction and decommissioning would not result in a cumulatively considerable increase in emissions of non-attainment pollutants. The contribution of Project construction emissions to the cumulative air quality impact in the region would be less than significant.

Project operation would include very minimal emissions of ozone precursors ROG and NO_x, PM_{10}, and $PM_{2.5}$, well below the SJVAPCD's thresholds; therefore, operation and maintenance would not result in a cumulatively considerable increase in emissions of non-attainment pollutants and the associated cumulative impact would be less than significant.

Project emissions of pollutants for which the Air Basin is in attainment for state and federal air quality standards (e.g., CO and SO_x) would not lead to a cumulative impact because the individual Project emissions would be well below the SJVAPCD thresholds in an area where there is no existing adverse cumulative impact associated with those pollutants.

The SJVAPCD considers TAC emissions to be localized impacts. The SJVAPCD has established thresholds of significance for TACs that are conservative and protective of health impacts on sensitive receptors. Because impacts from TACs are localized and the thresholds of significance for TACs have been established at such a conservative level, Project risks over the individual thresholds of significance are also considered cumulatively significant (SJVAPCD 2015a). As discussed under Impact 4.4-4, the results of the health risk assessment prepared for the Project demonstrated that emissions from construction and decommissioning would not

lead to health risk impacts in excess of the SJVAPCD 20-in-a-million cancer threshold and chronic HI of 1. Therefore, the Project would not result in a cumulatively significant impact related to TACs. Similarly, odor impacts from the Project would be very minimal and localized and would not contribute to cumulative odors impacts in the area. Other cumulative projects proposed with similar construction timelines in the vicinity of the Project site include the Scarlet Solar Energy Project adjacent to and directly east of the Project site, the Luna Valley Solar Project adjacent to and directly west of the Project site. Both these projects were also found to result in construction health risks below the SJVAPCD thresholds.

SJVAPCD also considers cumulative CO impacts to be accounted for in a CO hotspot analysis (SJVAPCD 2015a). As discussed under Impact 4.4-4, construction and decommissioning-related traffic is not anticipated to create a CO hotspot, as emissions would not be concentrated and would be dispersed rapidly. In addition, there is no existing adverse cumulative CO impact. Therefore, impacts to sensitive receptors regarding potential CO hotspots resulting from the Project's contribution to cumulative traffic-related air quality impacts would be less than significant.

In addition, the Project could contribute to a cumulative impact in relation to dust impacts. However, the Project and other projects under construction in the Air Basin would be required to comply with SJVAPCD Rule 8021 to control dust emissions generated during grading activities. In addition, the Project and other projects would comply with Regulation VIII that would require a Dust Control Plan, and all applicable control measures would be fully implemented. Therefore, the Project's incremental contribution to cumulative dust impacts would be less than significant. Although there is an existing adverse cumulative Valley Fever impact in the Air Basin, implementation of fugitive dust control measures by the Project and other projects under construction in the area consistent with Rule 8021 would reduce exposure to *Coccidioides immitis* spores that cause Valley Fever. In addition, the Applicant would be required to ensure that all independently enforceable protections of worker safety and health are in place and implemented. The Project's incremental contribution to cumulative Valley Fever-related impacts would be less than significant.

4.4.5 References

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4.5 Biological Resources

This section identifies and evaluates issues related to Biological Resources in the context of the Project and alternatives. It describes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

This analysis is based in part on the Biological Resources Report for Sonrisa Solar Park Project that was prepared on the Applicant's behalf. A copy of the report is provided in Appendix F-1. The preparers of this Draft EIR independently reviewed this and other materials prepared by or on behalf of the Applicants and determined them to be suitable for reliance on (in combination with other materials included in the formal record) in the preparation of this Draft EIR. The analysis additionally responds to scoping input received from the California Department of Fish and Wildlife (CDFW) pertaining to protection of special-status wildlife species. See Appendix A, *Scoping Report*.

4.5.1 Setting

4.5.1.1 Environmental Setting

The Project site is located in the western San Joaquin Valley in unincorporated Fresno County, 11 miles east of Interstate 5 (I-5) and 9 miles south of the City of Mendota, near the western edge of the San Joaquin Valley where the Coast Range begins west of I-5. The climate in this region is characterized by hot dry summers and cool, mild winters. Daytime temperatures in the summer may exceed 100 degrees Fahrenheit. In winter, daytime high temperatures are usually in the 50s, with lows around 35 degrees Fahrenheit.

The Project site is located within Sections 17, 18, and 19 of Township 15 S, Range 15 E, on the Cantua Creek, Coit Ranch, Levis, and Tranquillity quadrants of the U.S. Geological Survey (USGS) 7.5-minute quadrangles. It encompasses approximately 2,000 acres of agricultural lands and is generally bounded by agricultural fields, between State Route 33 (SR 33) to the west, West Adams Avenue to the north, and West Manning Avenue to the south. The Project site consists of flat terrain sloping gradually from southwest to northeast. Natural Resources Conservation Service (NRCS) data shows three soil types mapped on the Project area: Tranquillity clay, saline-sodic, wet, 0 to 1-percent slopes; Ciervo clay, saline-sodic, wet, 0 to 1-percent slopes; Ciervo, wet-Ciervo complex, saline-sodic, 0 to 1-percent slopes; and Calflax clay loam, saline-sodic, wet, 0 to 1-percent slopes MLRA 17 (USDA, 2020). Elevations on the Project site range from approximately 165 to 190 feet above mean sea level (amsl).

The Project site has been intermittently dry-farmed for wheat, barley, and grain hay crops over the past decade. Existing land uses surrounding the site are primarily agricultural, with a few large-scale solar energy projects, including the Tranquillity Solar Project, located approximately 1-mile south of the Project site. Little uncultivated natural habitat exists in the local area. The nearest areas supporting natural habitats include the Mendota Wildlife Area and Fresno Slough

3.1 miles northeast, and open rangelands associated with the interior Coast Range approximately 7.3 miles southwest (Appendix F-1).

Vegetation Communities

Two land cover types were mapped within the Project site and gen-tie alignment: agriculture and tamarisk thickets. No native vegetation communities nor any sensitive vegetation communities occur on the Project site. The gen-tie line alignment associated with the Project is located adjacent to developed areas, including paved roads and farm service roads.

The dominant land cover type on the Project site is general agriculture, which is an anthropogenic land cover type that is not described in the Manual of California Vegetation (Sawyer *et al*., 2009) and does not have a state sensitivity ranking because it is composed of non-native species. Farming practices on the site include soil disking and tilling, crop planting/production, and herbicide application, as well as regular maintenance and disturbance of areas under agricultural production. Historically, agricultural production on the Project site has included dry-farmed barley, wheat, and grain hay crops. As of 2018, the site was predominantly used for grain hay, with a few fields along the southeastern section of the Project site left fallow. During biological surveys, the land was observed to have been recently disked and appeared to be under agricultural production with grain or hay crops (Appendix F-1).

Two small tamarisk thicket communities dominated by tamarisk (*Tamarix aphylla and T. ramosissima*), occur within the Project site, along South Monterey Avenue and South Derrick Avenue. Tamarisk Thickets Shrubland Semi-Natural Alliance ("tamarisk thickets") are characterized in the *Manual of California Vegetation*, but as a non-native species do not have a state sensitivity rating. Tamarisk thickets typically occur at the margins of arroyos, lakes, ditches, washes, rivers, and other watercourses (Sawyer *et al.,* 2009).

Wildlife

During biological surveys at the Project site, no amphibian species were observed. One common reptile species, gopher snake (*Pituophis catenifer*), was observed. Suitable foraging habitat for raptors is present, as is nesting habitat in transmission towers and large trees. Raptors observed during biological surveys included red-tailed hawk (*Buteo jamaicensis*), barn owl (*Tyto alba*), northern harrier (*Circus cyaneus*) and great-horned owl (*Bubo virginianus*), as well as Swainson's hawk (*Buteo swainsoni*), a state-listed threatened species. Other birds observed included common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*), horned lark (*Eremophila alpestris*), Eurasian collared-dove (*Streptopelia decaocto*), western kingbird (*Tyrannus verticalis*), and loggerhead shrike (*Lanius ludovicianus*) (Appendix F-1).

Mammal species observed included desert cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit (*Lepus californicus*). Small mammal burrows were observed during survey efforts but were largely limited to the ruderal and disturbed areas along the margins of the fields and roads. Several burrows showed sign of use (e.g., tracks, scat) by California ground squirrel. Small

mammals such as house mouse (*Mus musculus*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), and harvest mouse (*Reithrodontomys megalotis*) may burrow on-site, but agricultural practices such as disking, harvesting, and use of rodenticides limit abundance. Coyote and red fox may use the Project site for foraging and/or dispersal (Appendix F-1).

4.5.1.2 Special-Status Species

Special-Status Plant Species

The Project site and gen-tie extension lacks habitat for special-status plant species, due to the ongoing disturbance from agricultural production and management and a lack of suitable natural communities that typically support the species occurring in the region. The nearest CNDDB occurrence records for most special-status plant species in the region are more than 5.0 miles from the Project site (CDFW 2021). Table BIO-1 in Appendix F-2 identifies the special-status plant species that occur in the vicinity of the Project site based on CNDDB and CNPS databases, but none of these species are expected to occur on-site due to recent and historical land uses (Appendix F-2).

Special-Status Wildlife Species

Special-status wildlife with potential to occur on the Project site (for breeding, foraging, dispersal and/or wintering habitat) are identified in Table BIO-1 in Appendix F-2. The list was derived from CNDDB and USFWS Information for Planning and Consultation (CDFW 2021; USFWS 2021) queries based upon vegetation, soils, elevation and other factors, with most species unlikely to occur due to lack of suitable aquatic habitat; regular tilling and agricultural production; or the site being outside the species' known or described range. **Figure 4.5-1**, *Special-Status Wildlife Observations*, shows the special-status wildlife species that have been recorded within 5.0 miles of the Project site (CDFW, 2021).

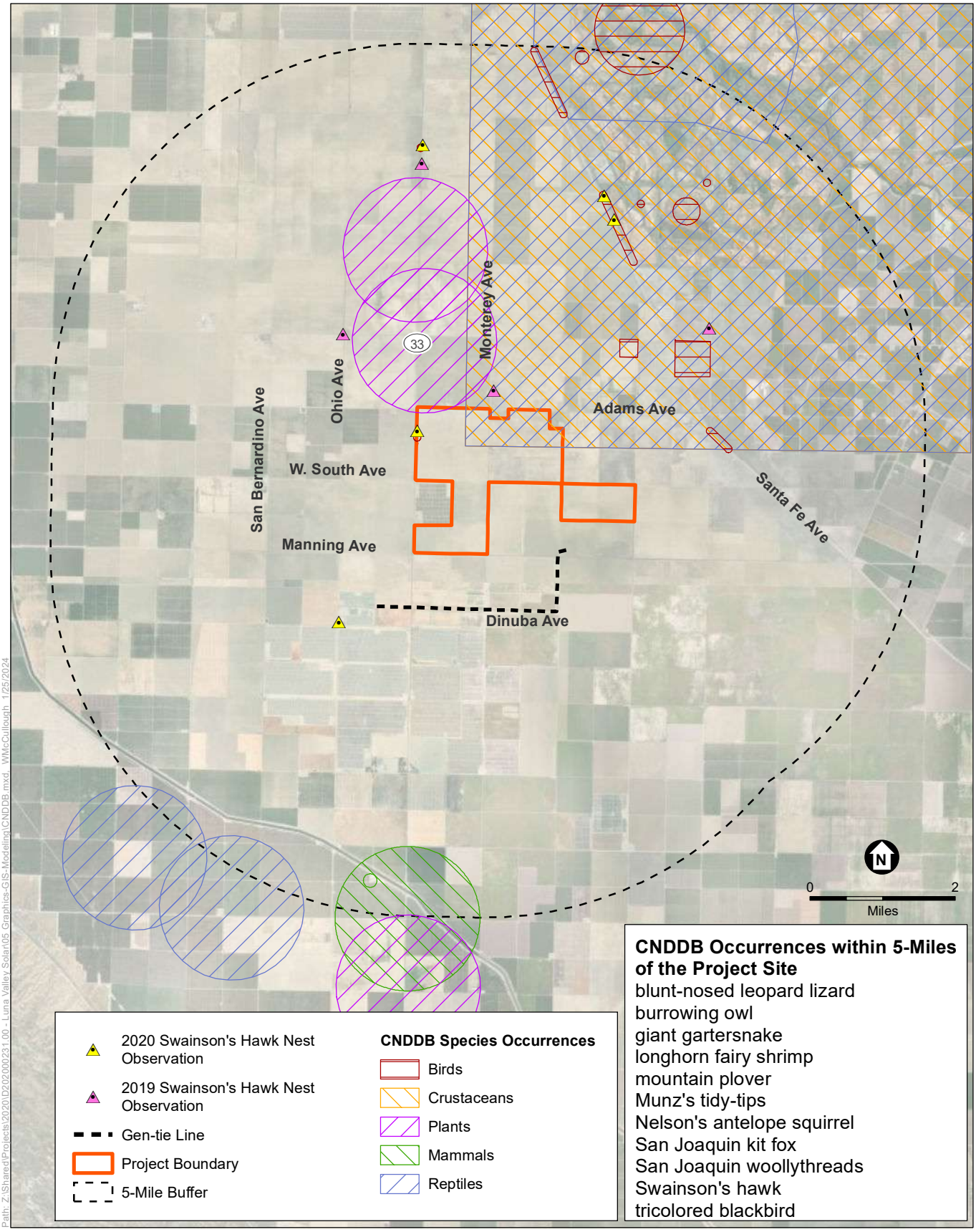
Species with moderate or high potential to occur, or for which surveys were conducted on-site, are discussed below. Focused biological surveys were conducted at the Project site in 2019 for burrowing owl and Swainson's hawk; supplemental reconnaissance-level surveys for Swainson's hawk were conducted in 2020 (Appendix F-1).

Special-Status Birds

The Project site provides suitable foraging and nesting habitat for a number of special-status and migratory birds, including Swainson's hawk and loggerhead shrike, which were both observed nesting on-site. The gen-tie alignment provides suitable foraging habitat for birds; however, nesting habitat is limited, as little to no vegetation is present.

Burrowing Owl

Burrowing owl is a California Species of Special Concern. In California, burrowing owls are yearlong residents of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats (Zeiner *et al.* 1990a). Preferred habitat is generally short, sparse vegetation with few shrubs, level to gentle topography, and well-drained



SOURCE: Dudek, 2021

Sonrisa Solar Project

Figure 4.5-1
Special-status species occurrences at the Project Site

soils (Haug *et al*. 1993). Burrowing owls most commonly live in California ground squirrel burrows but may occur in human-altered landscapes such as agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation is short and sparse, burrows are available; and foraging habitat is nearby. Debris piles, riprap, culverts, and pipes can be used burrow substitutes.

Focused protocol-level breeding season surveys for burrowing owl were conducted April 12, May 10, May 31, and June 21, 2019. Suitable size burrows at least 4 inches in diameter were observed but no burrowing owl or any sign (e.g., whitewash, pellets, prey remains, feathers) of this species was observed. During the November 2020 site visit along the gen-tie alignment, a few small Botta's pocket gopher (*Thomomys bottae*) and old California ground squirrel burrows were observed along the roadside margins. No rodent activity was observed during the survey, and no observations of burrowing owl sign were made (Appendix F-1). Nesting habitat on the Project site is considered limited, and the species is considered unlikely to breed or overwinter on the site. However, the Project site contains suitable prey for burrowing owl, and it has moderate potential to occur while foraging.

Loggerhead Shrike

The loggerhead shrike is a California Species of Special Concern. This species is widespread throughout the United States and is a year-round resident in California. Preferred habitats include open areas that include scattered shrubs, trees, posts, fences, utility lines, or other perches with views of open ground, as well as nearby spiny vegetation or man-made structures (such as chain-link fences or barbed wire) to impale prey, such as rodents or smaller birds. Loggerhead shrikes occur frequently in riparian areas, grasslands, scrublands, and open woodlands, as well as agricultural areas, mowed roadsides, and cemeteries. They nest in trees or shrubs (Humple 2008). The Project site provides suitable foraging and nesting habitat, and loggerhead shrikes were observed on multiple occasions during the field surveys. Although no nesting loggerhead shrikes were observed, focused nest surveys for this species were not conducted and there is high potential that the species could nest in limited portions of the site, such as within tamarisk trees.

Mountain Plover

The mountain plover is a California Species of Special Concern during its wintering period in California. It is found in California from September through March, in short grasslands and plowed fields of the Central Valley and foothill valleys in San Joaquin Valley as well as farther south. They prefer areas with little or no vegetation, including short grasslands, freshly plowed fields, newly sprouting grain fields, and sod farms (Appendix F-1). Extensive suitable habitat is likely available on agricultural lands surrounding the Project site. Mountain plovers have moderate potential to occur on-site during winter or migration, depending on crop rotation and other factors influencing habitat conditions.

Swainson's Hawk

The Swainson's hawk is state-listed as a threatened species in California. It nests in the Central Valley, Klamath Basin, and some mountain areas, where it prefers riparian groves, stands of trees in agricultural environments, oak savanna, and juniper-sage flats. In the San Joaquin Valley, it typically nests in riparian areas and in isolated tree clusters, often near rural residences or other

areas with some human disturbance. Swainson's hawk forages in crop fields in the Central Valley, as well as grasslands, rangelands, and fallow agricultural fields.

Protocol-level surveys for Swainson's hawk were conducted April 11, April 17–19, June 20 and 21, July 1, and July 10 and 11, 2019. Supplemental surveys for Swainson's hawk were conducted April 12 and 13 and April 16 and 17, 2020. Additional protocol surveys were conducted April 5 through April 20 and June 10 through July 31, 2022 and 2023. Over the course of the protocol-level surveys conducted in 2022 and 2023, a total of five active Swainson's hawk nests were recorded (Appendix F-3, Appendix F-4). Three of these nests occur within the Project site (Appendix F-3, Appendix F-4).

The first of the three nests within the Project site is in a tamarisk tree on the eastern side of South Derrick Avenue, south of West Adams Avenue; in both 2022 and 2023, this nest appears to have supported successful fledglings (Appendix F-3, Appendix F-4). The second of these nests within the Project site is in another tamarisk tree located on the eastern side of South Monterey Avenue, south of West Adams Avenue; two nestlings were observed in this nest during observations in 2023 (Appendix F-3). The third of these nests – observed for the first time in 2023 – is located on a utility pole on the south side of West Adams Avenue; at least one single downy nestling was observed at this nest during survey visits (Appendix F-4).

Two other Swainson's hawk nests were observed during the 2022 and 2023 surveys, outside the Project site footprint but within the 0.5-mile survey buffer (Appendix F-3, Appendix F-4). These include a nest in a tamarisk tree on the western side of South Derrick Avenue, north of West Manning Avenue, under a utility pole approximately 475 feet northwest of the Project site boundary. In 2022, while egg incubation was presumably observed during site visits in April, no nestlings were found during subsequent visits in July and the nest appears to have been abandoned for the season; in 2023, presumed egg incubation was observed in June and during a last survey pass in July, a single fledging was observed at this nest tree. The second nest found within the survey buffer was found in 2022 in a small willow tree at the corner of South Ohio Avenue and West Dinuba Avenue, located approximately 0.33 mile southwest of the gen-tie line boundary. Surveyors observed two adults at the nest site actively nest building, however no more Swainson's hawk activity was observed at this second nest during follow-up visits in 2022 or in 2023 (Appendix F-3, Appendix F-4).

Tricolored Blackbird

Tricolored blackbird is listed as state-threatened and is also a Species of Special Concern. The tricolored blackbird typically breeds near fresh water, preferably in emergent wetlands with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbaceous vegetation. These habitats do not occur on the Project site; however, Fresno Slough and the Mendota Wildlife Area support suitable habitat, and this species may periodically use on-site agricultural fields as foraging habitat. A substantial portion of Central Valley tricolored blackbirds also use silage crops such as triticale and wheat to build their nests. No tricolored blackbirds were observed during biological surveys in 2019 and 2020 (Appendix F-1), and the species is considered unlikely to occur on the site when fallowed.

Mammals

Special-status mammals with potential to occur on the Project site are listed in Appendix F-2.

American Badger

The American badger is a California Species of Special Concern. American badgers are associated with dry, open, treeless prairies and grasslands; pasturelands; open shrublands and woodlands; parklands; and desert areas (Zeiner *et al.* 1990b). During the multi-species burrow assessment conducted in 2019, burrows were evaluated for potential American badger use. No suitable burrows for badgers were observed, nor any badgers or sign of badger use were seen during the surveys (Appendix F-1). The species may occasionally transit the Project site, but is unlikely to den onsite.

San Joaquin Kit Fox

The San Joaquin kit fox is a federal endangered and state threatened species. It is a year-round resident of arid and semi-arid regions of the San Joaquin Valley as well as lower elevations of the Sierra Nevada foothills and Coast Ranges (USFWS 1998). Kit fox mostly inhabit non-irrigated grasslands but may also occur in scrub habitats (USFWS 1998). San Joaquin kit fox may venture into agricultural lands for dispersal or foraging, but are unlikely to reside there due to frequent disturbance. During the multi-species burrow assessment conducted in 2019, burrows were evaluated for potential kit fox use. However, no burrows showed any sign of kit fox use or presence (e.g., scat, prey remains, fresh digging, claw marks) (Appendix F-1). Given the relative scarcity of suitable prey and high level of disturbance on-site, San Joaquin kit fox is considered unlikely to burrow on the site. Kit foxes may transit the site on an infrequent basis, but would not reside on-site due to the lack of subterranean habitat and poor on-site forage.

Bat Species

In addition to migratory birds, Tamarisk trees on the site may provide roosting habitat for common bat species and special-status bats (species of special concern) including western mastiff bat (*Eumops perotis californicus*) and western red bat (*Lasiurus blossevillii*). These bat species forage in open areas, including agricultural fields, and roost in crevices within buildings, outcrops or trees, including orchard trees.

Wetlands

Although on-site wetland or potentially jurisdictional aquatic features were identified in the National Wetlands Inventory database, no such features were observed during the field surveys, likely due to agricultural cultivation and management. The field survey identified one constructed non-jurisdictional ditch in the central portion of the Project site. This ditch extends eastward from the northeastern boundary of the existing Tranquillity Solar facility (east of SR 33) and continues approximately 2,800 feet to the east before turning north in the center of the site, extending approximately 2,650 feet, and again turning abruptly east and extending for approximately 250 feet before ending in an agricultural field. The ditch is located along road margins at the edge of existing agricultural fields and was dry at the time of surveys, with wetland indicators. Vegetation within the ditch was primarily non-native upland annual grasses such as red brome (*Bromus*

madritensis). The results of the field survey indicate that the ditch was excavated in uplands, and lacking wetland vegetation or hydrology or any surface connection to downstream waters, this ditch is not considered a jurisdictional feature that would be regulated by the USACE, RWQCB, or CDFW. The field survey disclosed that no other potentially jurisdictional features were observed during the aquatic resources delineation. Hence, no federal or state jurisdictional features occur on the Project site (Appendix F-1).

4.5.1.3 Regulatory Setting

Federal

Endangered Species Act of 1973, as amended (16 U.S.C. §§1531-1543)

The federal Endangered Species Act of 1973 (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. In addition, the FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA also provides a program for the conservation and recovery of threatened and endangered species as well as the conservation of designated critical habitat that USFWS determines is required for the survival and recovery of these listed species.

Section 9 lists those actions that are prohibited under the FESA. The definition of "take" includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Although unauthorized take of a listed species is prohibited, take may be allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit.

Migratory Bird Treaty Act (16 U.S.C. §§703-711)

The Migratory Bird Treaty Act (MBTA) is the domestic law that affirms and implements a commitment by the U.S. to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. Unless and except as permitted by regulations, the MBTA makes it unlawful at any time, by any means, or in any manner to intentionally pursue, hunt, take, capture, or kill migratory birds anywhere in the United States. The law also applies to disturbance and removal of nests occupied by migratory birds or their eggs during the breeding season, whether intentional or incidental.

Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. §668)

The federal Bald and Golden Eagle Protection Act protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of

this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" (16 U.S.C. §668c). "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (72 Fed. Reg. 31132; 50 CFR §22.3).

State

California Endangered Species Act (Fish and Game Code §2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is "consistent" with the CESA under Fish and Game Code Section 2080.1. Before a project results in take of a species listed under the CESA, a take permit must be issued under Section 2081(b).

Fish and Game Code Sections 2080 and 2081

Section 2080 of the Fish and Game Code states, "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the [State Fish and Game] Commission determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081, CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding, if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project operator ensures adequate funding to implement the measures required by CDFW. CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Fish and Game Code Sections 3503, 3503.5, and 3513

Under these sections of the Fish and Game Code, a project operator is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey; the taking or possessing of any migratory nongame bird; the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or nongame birds; or the taking of any nongame bird pursuant to Fish and Game Code section 3800, whether intentional or incidental.

California Environmental Quality Act Guidelines Section 15380

In addition to the protections provided by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species nonetheless may be considered rare or endangered for purposes of CEQA if the species can be shown to meet certain specified criteria:

(A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or

(B) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

Native Plant Protection Act (Fish and Game Code §§1900-1913)

California's Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of endangered or rare plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use in areas that support listed plants.

Local

Fresno County 2000 General Plan

The Fresno County General Plan (Fresno County 2000) outlines several policies intended for the protection of biological resources County-wide, including the following, which apply to the Project:

> ***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 Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.
>
> ***Policy OS-E.2:*** The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both on-site habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the U.S. Fish and Wildlife Service and/or the California Department of Fish and Game.

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 Game officials and the U.S. Fish and Wildlife Service.

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.

Policy OS-F.5: The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. 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.7: The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.

Policy LU-B.13: In conjunction with environmental reviews under CEQA, the County shall require applicants to identify biological resources to determine if there are sensitive and/or important flora and fauna that require special protection measures.

Program LU-A.C: The County shall develop and implement guidelines for design and maintenance of buffers to be required when new non-agricultural uses are approved in agricultural areas. Buffer design and maintenance guidelines shall include, but not be limited to, the following:

a. Buffers shall be physically and biologically designed to avoid conflicts between agriculture and non-agricultural uses.
b. Buffers shall be located on the parcel for which a permit is sought and shall protect the maximum amount of farmable land.
c. Buffers generally shall consist of a physical separation between agricultural and non-agricultural uses. The appropriate width shall be determined on a site-by-site basis taking into account the type of existing agricultural uses, the nature of the proposed development, the natural features of the site, and any other factors that affect the specific situation.
d. Appropriate types of land uses for buffers include compatible agriculture, open space and recreational uses such as parks and golf courses, industrial uses, and cemeteries.

e. The County may condition its approval of a project on the ongoing maintenance of buffers.

Fresno County Code

Chapter 13.12 – Trees and Shrubs

This section establishes permit rules for tree planting and landscaping, including species of trees, planting locations and irrigation regimes.

4.5.2 Significance Criteria

The Project would result in significant impacts to biological resources if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

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;

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.5.3 Direct and Indirect Effects

4.5.3.1 Methodology

The following impact analysis is based on existing and potential biological resources that occur or could occur on the Project site and immediate vicinity, as identified through a review of relevant literature and occurrences databases, and focused biological surveys. Such resources include: sensitive habitats, including potentially jurisdictional features; special-status plant and wildlife species; and potential for wildlife movement corridors.

4.5.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with mitigation incorporated for criteria a) and e); a less-than-significant impact to wildlife movement regarding

criterion d); and no impact with respect to criteria b), c), or f). The impact conclusions and mitigation recommendations for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

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

Impact 4.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status species. (*Less than Significant with Mitigation Incorporated*)

Special-status plants

No special-status plants were observed nor are likely to occur on-site due to existing soil conditions and ongoing agricultural and road disturbances. Thus, there would be no impact.

San Joaquin kit fox

While the disked and actively cultivated agricultural lands on-site are not suitable denning habitat and only provide limited foraging habitat, limited suitable burrows are present on the margins of the site in un-disked areas. No burrows or other sign of kit fox were observed during site surveys; however, the Project site is surrounded by other agricultural lands, which could potentially support San Joaquin kit fox movement. Construction sites could indirectly attract this species through the presence of food items or materials such as large pipes that could provide temporary shelter. Thus, San Joaquin kit fox may sporadically occur on the Project site. If this species occurs at the site, then construction activities could have the potential to cause a significant adverse impact to the San Joaquin kit fox either directly (e.g., through mortality or injury from construction vehicles or ground disturbance) or indirectly (disturbance from night lighting, which may interfere with foraging; increased site activity, which may draw predators; or other factors, such as poisoning from rodenticides or injury from trenches).

Preconstruction clearance surveys, wildlife appropriate fencing, and other minimization measures described in **Mitigation Measures 4.5-1 and 4.5-2** would ensure that no San Joaquin kit foxes are impacted during construction. The appropriate fencing would allow kit foxes to pass through the site and ensure movement is unconstrained once the Project is operational. Following the implementation of these mitigation measures, potentially significant direct and indirect impacts to the San Joaquin kit fox would be reduced to a less-than-significant level.

Swainson's hawk

CDFW considers active Swainson's hawk nests trees to be ones used for breeding by the species during one or more of the last five years. Three active Swainson's hawk nests were observed on-site during protocol-level surveys conducted in 2022 and 2023; two of these nests occur in tamarisk trees and one nest was observed on a utility pole. An additional two active Swainson's

hawk nests were observed within 0.5 mile of the Project site during the 2022/2023 surveys (Appendix F-3, Appendix F-4). Construction activities initiated within 0.25 mile of an active Swainson's hawk or within approximately 500 feet of other raptors nest could disturb the birds nesting in the vicinity, thereby resulting in nest disturbance or abandonment, a significant impact (Dudek 2021). Removal of the two tamarisk nest trees representing active Swainson's hawk nest trees would be a significant impact. If any active nest trees need to be removed, an incidental take permit from CDFW would need to be obtained prior to the start of the nest tree removal. If applicable, as part of the conditions associated with authorizing the incidental take permit, CDFW would require specific-specific minimization and avoidance measures that fully mitigate the impacts of the Project on Swainson's hawk nesting habitat. Protective measures associated with the incidental take permit may include but are not limited to limiting nest tree removal to the non-breeding season for Swainson's hawk (generally considered between October 1 – February 1) and potential additional compensatory mitigation to offset the direct loss of the nest trees.

Swainson's hawks nesting in the vicinity of the Project site may be impacted by noise and disturbance from nearby construction. Disturbance can cause adults to leave nests for long periods of time, or even abandon them. The loss of active Swainson's hawk nests would be a significant impact. However, implementation of **Mitigation Measure 4.5-3** (described below) would include requirements for preconstruction surveys and specific buffers to reduce potential impacts on nesting Swainson's hawks to a less-than-significant level.

Raptor Species

Swainson's hawk and other raptor species also may forage on the Project site. Despite the active agricultural operation, portions of the site provide habitat for prey, including ground squirrels and other rodents. Conversion of these lands to solar facilities would reduce the amount of available foraging habitat, and potentially cause hawks to range farther from their nests for prey. The 1,700 acres of fallow agricultural land that would be removed by the Project would constitute a loss of approximately 0.8 percent of the total available suitable foraging habitat within 10 miles of the Project site (Appendix F-1). Because of the large amount of suitable foraging habitat in the vicinity of the site, the loss of 1,700 acres of Swainson's hawk foraging habitat is considered less than significant.[1]

If Swainson's hawk or other raptors were present on or near the site during construction activities, they could experience mortality or injury from disturbance or collision with project facilities and equipment including transmission poles or wires, fencing, panels and other array structures, and heavy equipment. Raptors generally are thought to be able to avoid obstacles; however, their collision risk increases when they are foraging for prey or engaged in territorial defense (APLIC 2012). Although Fresno County contains many high-voltage transmission lines, the Project would introduce additional collision hazards to the site. The impact of collision on Swainson's hawk and other raptors would be less than significant with adherence to the Avian Power Line Interaction

[1] The Biological Resources Technical Report (Appendix F-1) assessed the Project's originally proposed 1,700 acres. The additional 400 acres now included in the Project description were previously analyzed for solar use as part of the Scarlet Solar Energy Project EIR (Fresno County 2021a, b). The Scarlet Solar Energy Project EIR found that, with implementation of identified mitigation measures, impacts to Swainson's hawk foraging habitat would be less than significant.

Committee (APLIC) standards identified in **Mitigation Measure 4.5-3**, which would minimize impacts to Swainson's hawks and other raptors during construction, operation and decommissioning. Implementation of these measures would reduce potential direct and indirect impacts from collision to Swainson's hawk and other raptors to a less-than-significant level.

Burrowing Owl

Although no burrowing owls nor owl sign were observed during surveys, the Project site does support limited potential burrow habitat and foraging habitat for this species. However, given the scarcity of burrows and presence of agricultural activity, burrowing owls are unlikely to be present. In the unlikely event that burrowing owls are present on the Project site at the time of construction, construction activities could result in mortality to owls or destruction of eggs or nests. Construction noise and increased levels of human activity could also result in abandonment of active burrows. Preconstruction clearance surveys and other minimization measures as described in **Mitigation Measures 4.5-1** and **4.5-2** would implement CDFW exclusion methodologies (as explained in the measures) to reduce these impacts to a less-than-significant level.

Loggerhead Shrike and other migratory birds

Depending on the timing of construction-related activities, the Project could result in the direct loss of active nests of special-status or migratory bird species, including northern harrier, or loggerhead shrike; the abandonment of a nest by adult birds; or the direct loss of individual nests, either of ground nesters or birds nesting in trees or shrubs or on power lines. The potential loss of an active migratory bird nest would be a significant impact. Smaller migratory birds may also be impacted by collision with power lines. Implementation of **Mitigation Measure 4.5-4** (as described below) would conform to APLIC standards and include specific avoidance measures to reduce potential conflicts and associated impacts to nesting migratory birds to a less-than-significant level.

Bats

Direct impacts to western red bat or other tree-roosting bats from construction may include loss of roosting habitat in the tamarisk trees on-site which may serve as day roosts or maternity roosts for bats. Indirect impacts could include construction noise and disturbance, which can potentially result in abandonment of maternity roosts and daytime roosts, exposing the bats to heat stress or predators. Construction noise and human disturbance that could adversely affect roosting bats or maternal roosts would be a significant impact. However, implementation of **Mitigation Measure 4.5-5** (described below) would include preconstruction surveys and specific avoidance measures, which would reduce this impact to a less-than-significant level.

Impact 4.5-2: Project operation could have a substantial adverse direct or indirect impact on special-status species. (*Less than Significant with Mitigation Incorporated*)

San Joaquin kit fox

During operation of the Project, the site would be fenced with chain-link fencing elevated off the ground to permit passage by San Joaquin kit fox. Because the habitat at the Project site is of

generally poor quality for this species due to high levels of disturbance and active agriculture, it would only be present during occasional foraging or transit. However, the cessation of site disking and exclusion of kit fox predators during the operations phase could feasibly improve site conditions for kit fox, including improvement of movement, foraging, and denning opportunities. Studies at the Topaz Solar Farm in San Luis Obispo County indicate that the fenced arrays may be areas of reduced predation risk and in essence function as refugia for kit foxes (Cypher *et al*. 2019). In particular, the study found that survival of kit foxes was similar between the solar and untilled reference sites, and if anything, trended higher on the solar site. Also, because use of arrays by larger predators such as coyote and raptors was reduced, competition for kit fox food resources also was reduced within the arrays (Cypher *et al*. 2019). The Topaz Solar Farm study found no significant adverse impacts to kit fox associated with the solar facility and in some instances identified potential species benefits associated with the facility. The study concluded that security fencing (permeable to foxes) afforded some protection from larger predators and the solar panels afforded protection to the kit foxes from eagles. On this basis, operation of the solar facility would have a less-than-significant impact on San Joaquin kit fox.

Swainson's Hawk, Burrowing Owl and other Raptors

Risk factors typically associated with avian collisions with man-made structures include size of facility, height of structures, and specific attributes of structures (guy wires and lighting/light attraction), as well as siting in high risk areas, frequency of inclement weather, type of development and species or taxa at potential risk. The role of these risk factors has been outlined in the U.S. Fish and Wildlife Service draft guidelines for wind turbines (USFWS 2012) and communication towers (USFWS 2013), as well as by various publications in the peer reviewed literature (Gehring *et al*. 2009 and 2011; Kerlinger *et al*. 2010). Such collisions can result in injury or mortality, including, in the case of powerlines, from electrocution. These impacts would be significant. Adherence to the current APLIC design standards for overhead powerlines as stated in **Mitigation Measure 4.5-3** would minimize mortality and injury from powerlines to raptors during construction, operation and decommissioning.

Other special-status birds and bats

Like raptors, smaller migratory birds, including special-status birds and bats may experience collision risk from powerlines. Implementation of APLIC standards in **Mitigation Measure 4.5-3** would reduce these impacts to a less-than-significant level. In addition, migratory birds may be affected by collisions with solar panel infrastructure during operation and maintenance. Ongoing monitoring data from solar projects suggest that a variety of birds may be susceptible to collisions with panels.

Causes of avian injuries and fatalities at commercial-scale solar projects resulting from the operation of solar facilities currently are being evaluated by the USFWS, CDFW, and USGS. The Mendota Wildlife Area, located approximately 5 miles northeast of the Project site, is a recognized stopover location for migratory birds travelling along the Pacific Flyway (CDFW 2017). The polarization signature of the Project's PV panels could attract both common and special-status migratory bird species to the Project site where they might mistake the reflective panels for a water body (Roth 2016). However, available data show no consistent

pattern to support or refute the hypothesis that water-dependent species are more susceptible to mortality at solar facilities (Argonne National Laboratory and National Renewable Energy Laboratory 2015). Limited fatality and/or incidental reporting data are available for avian collision with solar panels; however, no data are available specific to Fresno County or elsewhere in the Central Valley.

Studies from other areas have noted that monitoring data were preliminary; few facilities had data available; and additional data could cast new light on causes of avian mortality or means of reducing risk (Dietsch 2016; Walston *et al*. 2014; WEST 2014a, 2014b, 2018; Kosciuch *et al.* 2020). Although data from some PV solar array-type facilities indicate instances of avian mortality resulting from collisions, these data are episodic and the best available scientific information to date (referenced above) does not indicate a significant risk of substantial avian mortality occurring at facilities such as those proposed under the Project.

In addition, pre- and post-construction avian mortality studies from at least two existing solar energy projects in California have demonstrated that solar panels do not cause avian mortalities at rates higher than the baseline level. Specifically, survey results from the California Valley Solar and the Topaz Solar Project have shown that avian fatalities following project construction did not differ significantly from background mortality rates, that the species composition of birds found during background mortality studies was similar to the composition of species found among the built arrays, and that the cause of death of post-construction mortality events was generally not determinable or was suspected to be predation for fatalities found in either location (WEST 2017). Both projects are located in a predominantly agricultural and grassland setting similar to that proposed for the Project.

Thus, based on available data, incidental loss of special-status and migratory bird species due to collision-related injury or mortality would be a less than significant impact.

Mitigation measures proposed for potential significant impacts to special-status species include the following:

Mitigation Measure 4.5-1: Protection of Special-Status Species During Construction

Preconstruction surveys shall be conducted by a qualified biologist for the presence of San Joaquin kit fox and burrowing owl within 14 days prior to commencement of construction activities pursuant to the USFWS (2011) *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox* and CDFW (2012) staff report for burrowing owl. The surveys shall be conducted in areas of suitable habitat for San Joaquin kit fox and burrowing owl. Areas that have been disked or cultivated within 12 months prior to the start of ground-disturbing activities are not considered suitable. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to disturbance within active portions of the site. If no potential San Joaquin kit fox dens or burrowing owl burrows are identified, no further mitigation is required. If potential kit fox dens are observed and avoidance is determined to be feasible (as defined in CEQA Guidelines §15364 consistent with the USFWS [2011] *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox*) by a qualified biologist in consultation with the Project owner and the County, buffer distances shall be established prior to construction activities. If potential

burrowing owl burrows are observed and avoidance is determined to be feasible (as defined in the CDFW 2012 staff report on burrowing owl) by a qualified biologist in consultation with the Project owner and the County, an exclusion plan will be developed with minimum buffer distances prior to construction activities.

If avoidance of the potential dens or burrows is not feasible, the following measures shall be implemented to avoid potential adverse effects to the San Joaquin kit fox and/or burrowing owl:

- If the qualified biologist determines that potential dens or burrows are inactive, the biologist shall excavate these dens by hand with a shovel to prevent foxes or owls from using them during construction.

- If the qualified biologist determines that a potential non-natal kit fox den may be active, an on-site passive relocation program shall be implemented with prior approval from the USFWS. This program shall consist of excluding San Joaquin kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 72 hours to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that the San Joaquin kit foxes have stopped using active dens within the Project boundary, the dens shall be hand-excavated, as stated above for inactive dens. A similar exclusion methodology shall be used for burrowing owl exclusion, as described in the CDFW (2012) staff report on burrowing owl.

Mitigation Measure 4.5-2: Worker Environmental Awareness Training and Best Management Practices for Biological Resources

During construction, operation and maintenance, and decommissioning of the facility, the Project Owner and/or contractor shall implement the following general avoidance and protective measures to protect San Joaquin kit fox, burrowing owl, Swainson's hawk, and other special-status wildlife species:

- Prior to the initiation of ground disturbing activities and for the duration of construction and decommissioning activities, the Project Owner, or its contractor, shall implement a Worker Environmental Awareness Program (WEAP) to train construction and decommissioning personnel how to recognize and protect biological resources on the Project site. The WEAP training shall be conducted by a qualified biologist. Personnel shall sign a form provided by the trainer documenting their attendance and comprehension of the training. New personnel shall also be trained prior to joining existing work crews as the construction and/or decommissioning proceeds. The WEAP training shall include a review of the special-status species and other sensitive biological resources that could exist in the Project area, the locations of sensitive biological resources and their legal status and protections, and measures to be implemented for avoidance of these sensitive resources, highlighting the birds protected under the California Fish and Game Code and nesting birds protected under the MBTA, San Joaquin kit fox, burrowing owl, and Swainson's hawk. The WEAP training shall indicate the appropriate steps to be taken if a special-status species is observed, which may include work stoppage and coordination with the CDFW and USFWS.

- To prevent inadvertent entrapment of wildlife during construction, all excavated, steep-walled holes or trenches with a 2-foot or greater depth shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected by construction personnel for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a special-status species is trapped, the USFWS and/or CDFW shall be contacted immediately.

- All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at a construction site for one or more overnight periods shall be thoroughly inspected by construction personnel for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by the qualified biologist. Any vertical tubes (e.g., solar mount poles, chain link fencing poles, or any other hollow tubes or poles) used on the Project site shall be capped immediately after installation to avoid entrapment of birds.

- Vehicles and equipment parked on the site shall have the ground beneath the vehicle or equipment inspected by construction personnel for the presence of wildlife prior to moving.

- Vehicular traffic shall use existing routes of travel. Cross-country vehicle and equipment use outside of the Project properties shall be prohibited.

- A speed limit of 20 miles per hour shall be enforced within all construction areas.

- No work shall be conducted after sunset.

- A long-term trash abatement program shall be established for construction, operation, and decommissioning and submitted to the County. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to wildlife such as common raven (*Corvus corax*), coyote (*Canis latrans*), and feral dogs.

- Prior to the use of rodenticides as part of any rodent control program during construction, operation, or decommissioning, a rodent control plan shall be developed by the Project owner in coordination with a biologist familiar with special-status species (e.g. San Joaquin kit fox, Swainson's hawk) that occur in the area and could be adversely affected by the use of rodenticides. The plan shall include goals and objectives of rodent control, including that rodent control will only be implemented in focused locations where rodent populations have exceeded acceptable levels; the types of rodent control methods, and include pre-use coordination with Fresno County Agricultural Commissioner for recommendation of select rodenticides or other control programs. The rodent control program shall be developed in consultation with a qualified biologist and the project owner to ensure that methods proposed to control rodents do not impact non-target species. For any rodenticide approved for rodent control, the product label shall be thoroughly examined prior to application to verify if any restrictions exist for application of the product within the range of the San Joaquin

kit fox or other endangered or protected animals. Pellet bait rodenticide will be prohibited from use in areas accessible to San Joaquin kit fox.

- Workers shall be prohibited from bringing pets (excluding service animals) to the Project site and from feeding wildlife in the vicinity.

- No firearms shall be allowed on the Project site during construction, operation, or decommissioning.

- Intentional killing or collection of any wildlife species shall be prohibited.

- Fencing of the Solar Facility Project site shall incorporate wildlife-friendly fencing design. Fencing plans may use one of several potential designs that would allow kit foxes to pass through the fence while still providing for Project security and exclusion of other unwanted species (*e.g.*, domestic dogs and coyotes). Raised fences or fences with entry/exit points of at least 6 inches in diameter spaced along the bottom of the fence to allow species such as San Joaquin kit fox access into and through the Project site would be appropriate designs.

Mitigation Measure 4.5-3: Swainson's Hawk Nest Avoidance

For Swainson's hawk, preconstruction activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Timing and the number of phases of surveys can be adjusted based on the timing of the construction schedule. The surveys may be phased to coincide with active construction areas plus a 0.5-mile buffer of those areas.

If an active Swainson's hawk nest is discovered during the nesting season (March 1 through September 15) within 0.5 mile of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities (e.g., noise levels and duration), the location of construction relative to the nest and pre-existing disturbance levels (e.g., construction activities in historically agricultural land versus activities in non-agricultural land), the visibility of construction activities from the nest location (e.g., topography or vegetation that could block line-of-sight to the nest), the number of construction personnel required to perform activities within the setback, and other existing disturbances in the area that are not related to construction activities of this project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. When conducting the assessment, the biologist will consider the following levels of construction activity, with higher levels of activity requiring greater caution in determining setbacks:

- Light construction activity such as fence installation and limited vehicle access. Noise levels generated by these construction activities would likely be similar to existing ambient noise levels in closer proximity to the occupied nests.

- Moderate and/or isolated construction activity such as grading and construction of substation, substation-access road, inverter skids, and manual installation of solar panels. Noise levels generated by these construction activities would likely be similar to existing ambient noise levels beyond a moderate distance from the occupied nests.

- Heavy construction activity across a large area of the Project and/or using louder equipment such as pile drivers, concrete saws, or jackhammers. Noise levels for this type of activity will depend on location of the activities relative to the nest and allowing these activities within the 0.5-mile setback would require coordination with CDFW.

In the event the assessment determines that construction activities could occur closer than 0.5 miles to an active nest, in no event would construction activities occur within 500 feet of an active nest without approval from CDFW. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks would be required where activity occurs closer than 0.5 miles. The qualified biologist shall have the authority to stop work if it is determined that project construction is disturbing nesting activities. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season. In the event take cannot be avoided, the proponent shall confer with CDFW on the need for an incidental take permit and will comply with any specific-specific minimization and avoidance measures identified in the issued incidental take permit prior to the removal of active nest trees.

Mitigation Measure 4.5-4: Protection of Migratory Birds and Other Raptors

If construction or decommissioning is scheduled to commence outside of nesting season (September 1 to January 31), no preconstruction surveys or additional measures are required for nesting birds, including raptors. During the nesting bird breeding season (February 1 to August 31), to avoid impacts to nesting birds in the Project site and immediate vicinity, a qualified biologist shall conduct preconstruction surveys of all potential nesting habitat within the Project site where vegetation removal or ground disturbance is planned. The survey shall be performed within the site and also include potential nest sites within 300 feet of the site in areas where access to neighboring properties is available or visible using a spotting scope. Surveys shall be conducted no more than 14 days prior to construction or decommissioning activities. If construction is halted for 14 days or more, the area shall be re-surveyed prior to re-initiating work.

Surveys may be phased to occur shortly before a portion of the Project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable buffer (e.g., 300 feet for common raptors; 100 feet for passerines) shall be established around active nests by a qualified biologist and no construction within the buffer allowed until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). Encroachment into the buffer may occur at the discretion of a qualified biologist in coordination with CDFW. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest, or if breeding attempts have otherwise been unsuccessful.

To minimize the potential for avian injury and mortality from collision and electrocution, the Project will adhere to current Avian Power Line Interaction Committee (APLIC) design standards for overhead powerlines and associated structures, including use of avian-safe line designs, and installation of devices to make powerlines visible to birds (APLIC 2006, 2012).

Mitigation Measure 4.5-5 Protection of Bats

No earlier than 30 days prior to any construction or decommissioning ground disturbance, a qualified bat biologist shall conduct a preconstruction survey for roosting bats in trees to be removed or pruned and structures to be dismantled. Preconstruction surveys for roosting bats shall be conducted during the maternity season (March 1-July 31) for any construction or decommissioning ground disturbance that occurs within 300 feet of habitat capable of supporting bat nursery colonies. A minimum of one (1) day and one (1) evening visit shall take place. If no roosting bats are found, no further action is required. If a bat roost is found, the following measures shall be implemented to avoid impacts on roosting bats.

If active maternity roosts are found in trees or structures intended for removal as part of construction or decommissioning, such tree removal or dismantling of that structure shall commence before maternity colonies form (generally before March 1) or after young are flying (generally by July 31). Active maternal roosts shall not be disturbed.

If a non-maternal roost of bats is found in a tree or structure to be removed as part of construction or decommissioning, the individuals shall be safely evicted, under the direction of a qualified bat biologist and with approval from CDFW. Removal of the tree or dismantling of the structure should occur no sooner than two nights after the initial minor site modification (to alter airflow), under guidance of the qualified bat biologist. The modifications shall alter the bat habitat, causing bats to seek shelter elsewhere after they emerge for the night. On the following day, the tree or structure may be removed, in presence of the bat biologist. If any bat habitat is not removed, departure of bats from the construction area shall be confirmed with a follow-up survey prior to start of construction.

Significance after Mitigation: Less than Significant. The implementation of Mitigation Measures 4.5-1, 4.5-2, 4.5-3, 4.5-4, and 4.5-5 would reduce impacts to a less-than-significant level because impacts on special-status species would be avoided or minimized by surveys, monitoring, and relocation if required; site workers would be trained to avoid biological resources, and vehicle and construction site impacts would be curtailed; and migratory birds and bats would be avoided while nesting and roosting with suitable construction avoidance buffers, while collision impacts would be minimized using APLIC bird-safe design guidelines.

Criterion b) Whether the Project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service,

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The Project site does not contain any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW or USFWS. Therefore, the Project would have no impact on these resources. **(*No Impact*)**

Criterion c) Whether the Project would 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 impacts to state and federally protected wetlands and waters are anticipated. As discussed in Section 4.5.1.2, hydrologic features within the Project site are limited to an isolated agricultural drainage ditch which is non-jurisdictional. **(*No Impact*)**

Criterion d) Whether the Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impact 4.5-3: Construction could interfere substantially with established native resident or migratory wildlife corridors. (*Less than Significant Impact*)

The Project is not located in an identified terrestrial movement corridor for San Joaquin kit fox (USFWS 1998) or other terrestrial wildlife species. Following construction of the solar facility, the perimeter would be surrounded by chain-link fence raised off the ground to permit passage by kit fox and smaller mammals. Thus, the loss of movement across the site would be temporary in duration. Furthermore, because the site is located in an area heavily influenced by agricultural and in proximity to major roads, it is not an important wildlife movement corridor. Thus, impacts of the Project on wildlife corridors would be less than significant.

The Project is located within a significant avian migration route known as the Pacific Flyway, which covers the entire western side of North America. Although individual birds may be affected by collision, the Project is not anticipated to affect the regional bird populations that use the Pacific Flyway. There are no perennial water features on the Project site, and no corridors for aquatic species. In addition, no wildlife nursery sites have been identified on the Project site. Thus, no impacts would occur to fish or nursery areas.

Mitigation: None required.

Criterion e) Whether the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact 4.5-4: Construction could conflict with local policies or ordinances protecting biological resources. (*Less than Significant with Mitigation Incorporated*)

The County has policies and ordinances protecting biological resources, including wetland and riparian areas (Fresno County General Plan Goal OS-D); vegetation (Fresno County General Plan Goal OS-F), oak woodlands (Fresno County General Plan Policy OS-F.10); trees and shrubs (County Code Chapter 13.12); and flowers, foliage or fruit, trees, shrubs, plants, and grass in public parks and recreation areas. However, the Project would not conflict with any local policies or ordinances protecting biological resources, because none of these protected resources are present within the Project site.

The County also has policies protecting fish and wildlife habitat (Fresno County General Plan Goal OS-E). The Project site does not contain any fish habitat. The Project site and immediate

vicinity contain potentially suitable breeding, denning, or nesting habitat for wildlife species, including San Joaquin kit fox; burrowing owl and other raptors, including Swainson's hawk; and migratory birds, including loggerhead shrike. Implementation of the preconstruction wildlife surveys, worker environmental awareness and wildlife avoidance and protection measures described in **Mitigation Measures 4.5-1 through 4.5-3**, would avoid or minimize potential impacts to these species and ensure compliance with General Plan Goal OS-E. Therefore, the Project would not conflict with and would have a less than significant impact on local policies and ordinances protecting biological resources.

> **Mitigation:** Implement Mitigation Measure 4.5-1: Protection of Special-Status Species, Mitigation Measure 4.5-2: Worker Environmental Awareness Training and Best Management Practices for Biological Resources, and Mitigation Measure 4.5-3: Protection of Migratory Birds.
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> **Significance after Mitigation:** Less than Significant. The implementation of Mitigation Measures 4.5-1, 4.5-2 and 4.5-3 would reduce impacts to a less-than-significant level because impacts on special-status species would be avoided, or minimized by surveys, monitoring and relocation if required; site workers would be trained to avoid biological resources and vehicle and construction site impacts would be curtailed; and nesting birds would be avoided in season with suitable construction avoidance buffers.

Criterion f) Whether the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Project would not be constructed within the boundaries of any adopted HCP or NCCP. The closest HCP is the Eastern Fresno Habitat Plan, which governs an area located approximately 50 miles east of the Project site. There are no adopted NCCPs in Fresno County or in any of the adjacent counties, and no other approved local, regional, or state habitat conservation plans that would apply to the Project or the Project site. **(*No Impact*)**

PG&E Infrastructure

Energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Tranquillity Switching Station. PG&E would extend an existing 230 kV transmission line by up to 0.2 miles requiring up to six new poles of up to 140 feet in height. The transmission line extension would have the potential to cause collisions with raptors and other migratory birds, but would be subject to APLIC standards like all Project power lines and poles. The PG&E infrastructure would not affect habitat for terrestrial species, because it is located on disturbed land; it would not impact any wetlands or sensitive natural communities, wildlife corridors or nursery sites, or habitat conservation plans. The impact conclusions reached above for collision impacts to birds would be the same for this portion of the site. Impacts of the PG&E infrastructure on biological resources would be less than significant with no mitigation measures required. In addition, the combined impacts of the Project and PG&E infrastructure would be less-than-significant with mitigation incorporated.

4.5.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Compared to the Project, the disturbance area under Alternative 1 would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. The specific location of the reduced acreage has not been determined. Because a smaller project would disturb a smaller footprint, there is potential for it to reduce the Project's potential significant impacts relating to wildlife habitat, compared to the Project. However, as with the Project, similar general biological resources impacts would occur, albeit on a smaller scale, for the same protected species as identified for the Project. To reduce impacts, the same mitigation measures identified in this section for the Project (Mitigation 4.5-1 through 4.5-5) would also apply under Alternative 1. Depending on the footprint chosen under Alternative 1, it is possible that nesting and foraging habitat for Swainson's hawk, could be preserved along SR 33 and South Monterey Avenue. However, because disturbance under Alternative 1 would still occur, species protection measures would still be required, as described in Mitigation Measures 4.5-3. Alternative 1 would meet most of the core objectives of the Project and have a slightly reduced scale of biological resources impacts.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, transmission poles, powerlines, or other components would be constructed, operated, maintained, or decommissioned on the Project site. No solar panels or powerlines would be constructed, no ground disturbance would occur, and no impacts to the Swainson's hawk nest, other special-status wildlife and their habitat, or migratory birds would occur for any Project purpose, relative to baseline conditions. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Biological Resources.

4.5.4 Cumulative Analysis

Cumulative effects are caused by the incremental impact of a proposed project combined with the impacts of other closely related past, present, and reasonably foreseeable probable future projects. The ongoing impacts of past projects (including the existing Adams East and Tranquillity solar projects, and the other projects listed in Table 4.1-1) generally are reflected in the existing environmental setting described in Section 4.5.1.2. In this context, the cumulative effects of the Project and alternatives in combination with the incremental impacts of present and reasonably foreseeable probable future projects in the cumulative scenario are analyzed below.

As analyzed in Section 4.5.3, implementation of the Project would result in no impact to significance criterion b) regarding riparian habitat or other sensitive natural communities; to significance criterion c) regarding protected wetlands; or to significance criterion f) regarding HCPs and NCCPs. Accordingly, neither the Project nor alternatives would cause or contribute to any significant cumulative impact relating to these considerations. The potential for the Project's incremental impacts (with or without mitigation) to combine with the incremental impacts of

other projects in the cumulative scenario for the remaining biological resources considerations is analyzed below.

The geographic scope of this cumulative analysis includes the regional population or corridor extent for the species or community affected, or the extent of the local watershed, in the case of impacts to aquatic resources. The list of projects considered for cumulative analysis is in Table 4.1-1. The temporal scope of cumulative analysis is the life of the proposed solar facility and associated infrastructure, assumed to be 30 years.

Criterion a) Special-status Species

San Joaquin Kit Fox

Project impacts on San Joaquin kit fox from the Project after the implementation of recommended mitigation measures would be less than significant. The four planned solar facilities included as cumulative projects as well as the two additional energy and communication projects, also resulted in the removal of potential kit fox movement or foraging habitat, and have the potential to result in impacts to this species. While potential impacts to San Joaquin kit fox were possible for each of the projects listed in Table 4.1-1; all of these projects are located outside of the Coast Range and outside of the Ciervo-Panoche core area for San Joaquin kit fox, which occurs west of I-5 (USFWS 2010). The Project is located east of I-5, and also is not within the Ciervo-Panoche San Joaquin kit fox "core" or "satellite" recovery areas (USFWS 1998). Additionally, all of the "link" habitat for San Joaquin kit fox populations that is identified in the USFWS (2010) 5-year review occurs west of I-5. Each of the cumulative solar projects occurred within a dense agricultural landscape that is regularly disked, and therefore generally poorly suited as refugia habitat for this species. Because so much of the lands east of I-5, including those surrounding the cumulative projects, are cultivated with few habitat islands for kit fox, regional kit fox movement is already limited within this area.

In addition, findings from the Topaz Solar Farm, which has a security fence that is permeable to San Joaquin kit foxes, suggest that kit foxes benefit both from the presence of untilled lands beneath the panels, which provide infrequently disturbed habitat, and from the cover that the panels provide from larger terrestrial predators, such as coyotes, bobcats, and raptors (Cypher *et al*. 2019). For solar facilities where site fencing is permeable to kit foxes (e.g., at the Tranquillity Solar Project site), it is reasonable to deduce that habitat conditions could improve for this species at each of the cumulative project sites, and that the changed land uses and potential impacts on kit fox transit and foraging would be a less-than-significant or moderately beneficial impact. With implementation of wildlife-friendly design measures, the Project would not contribute to adverse cumulative impacts to identified kit fox population centers or to important linkage or satellite habitat areas. Therefore, the contribution of the Project to impacts on this species would not be cumulatively considerable.

Swainson's Hawk

Project impacts to Swainson's hawk after implementation of recommended mitigation measures would be less than significant. Mitigation measures would protect raptor and other bird nests

from disturbance during construction, and loss of nesting and foraging habitat is less than significant without mitigation required. The identified cumulative solar, energy and communication projects in Table 4.1-1 also have the potential to impact suitable nesting and foraging habitat for Swainson's hawk and other raptors. However, the total area of these existing and proposed cumulative projects is approximately 12,200 acres. Based on an evaluation of the County land use data, a total of 218,773 acres of similar agricultural lands to that present on the Project site exist within 10 miles of the site, and the loss of the cumulative projects would represent a loss of 5.6 percent of available foraging habitat (Appendix E-1). Therefore, the Project, in combination with all identified cumulative projects, would not result in a cumulatively considerable impact to Swainson's hawk or other raptors.

Migratory Birds

Impacts on common and special-status migratory birds for the duration of solar facility operation would be less than significant for the Project based on analysis of existing data from other solar facilities. Available data suggest that injury to and mortality of both common and special-status birds may occur from collision with PV panels at solar farms. However, as described above, survey results from the California Valley Solar and the Topaz Solar Project have shown that avian fatalities following project construction did not differ significantly from background mortality rates, that the species composition of birds found during background mortality studies was similar to the composition of species found among the built arrays, and that the cause of death of post-construction mortality events was generally not determinable or was suspected to be predation for fatalities found in either location (Ironwood 2017, WEST 2017). In addition, because the solar projects considered in this analysis are distant from the Mendota Wildlife Area stopover site, they are expected to attract little flyover traffic from migratory birds, and the level of avian fatalities that would occur at these sites is unknown.

In addition, compliance with required mitigation would ensure that this Project adheres to current APLIC design standards for overhead powerlines and associated structures (including use of avian-safe line designs, and installation of devices to make powerlines visible to birds), which would minimize the potential for avian injury and mortality from collisions and electrocution with such facilities. Because of these factors, the incremental effects of the Project on overall avian fatality from collision risk in the Central Valley would not be cumulatively considerable.

Burrowing Owl

Project impacts to burrowing owl after implementation of recommended mitigation measures would be less than significant. Burrowing owl has a moderate potential to burrow onsite, and mitigation measures would protect any burrowing owl burrows from disturbance during construction or decommissioning. Thus, the Project would not contribute to a regional impact on burrowing owl breeding habitat. The Project may cumulatively impact foraging habitat for burrowing owl; however, as stated in Appendix E-1, a total of 218,773 acres of similar agricultural lands to that present on the Project site exist within 10 miles of the site, and the combined cumulative projects would result in the loss of approximately 5.6 percent of available foraging habitat. Therefore, the Project, in combination with all identified cumulative projects, would not result in a cumulatively considerable impact to burrowing owl.

Criterion d) Wildlife Corridors

This Project would have less-than-significant impacts on wildlife movement due to installation of elevated chain-link fence that would not block passage of San Joaquin kit fox, badger, deer, and other larger mammals. In addition, the site is not an important wildlife movement corridor due to the surrounding areas being heavily used for agriculture and solar development, and the existing habitat being regularly disked, making much of it unsuitable for burrows. There is no existing significant cumulative impact on wildlife movement, and the incremental impacts of the Project, in combination with other present and reasonably foreseeable future projects in the cumulative scenario, would not cause one.

Criterion e) Local Ordinances

The Project would have less-than-significant impacts on local ordinances protecting wildlife species in Fresno County. All impacts on special-status species are mitigated to a less than significant level. There is no existing significant cumulative impact regarding conflict with local ordinances protecting wildlife species. The Project by itself would not cause a significant conflict with local ordinances and, in combination with other present and reasonably foreseeable future projects in the cumulative scenario, would not cause one.

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4.6 Cultural and Tribal Cultural Resources

This section identifies and evaluates issues related to cultural resources and tribal cultural resources, including archaeological, historic built architectural, and Native American resources, in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The County received scoping comments from the Native American Heritage Commission (NAHC) that recommended, pursuant to AB 52, that the County conduct consultation with tribes that are culturally affiliated with the Project site. The NAHC also recommended that the County conduct a cultural resources records search of the California Historical Resources Information System (CHRIS) and that an archaeological inventory survey report be prepared along with a search of the NAHC's Sacred Lands File (SLF).

This analysis is based in part on the Project-specific Cultural Resources Inventory Report and Historical Resources Evaluation Report prepared by Dudek in 2020 (Burns et al. 2020; Steffen et al. 2020). Respecting the culturally sensitive nature of the information included, the Cultural Resources Inventory Report and Historical Resources Evaluation Report are not included as appendices to this analysis. Nonetheless, preparers of this Draft EIR who have the appropriate professional credentials independently reviewed these reports and determined them to be suitable for reliance on (in combination with other materials included in the formal record) in the preparation of this Draft EIR.

4.6.1 Setting

4.6.1.1 Project Site

The study area for purposes of this analysis of potential impacts to cultural resources and tribal cultural resources includes the areas of potential ground disturbance within the Project site, both horizontally (approximately 2,000 acres) and vertically (up to a depth of 10 feet). A cultural resources records search was completed with a 1-mile buffer around the Project site to support analysis of the likely sensitivity of the Project site for cultural resources.

4.6.1.2 Environmental Setting

The Project site is located in California's Central Valley, which extends from the Siskiyou Mountains in the north to the Tehachapi Mountains in the south and covers approximately 20,000 square miles. The Central Valley is bounded by the Cascade Range and Sierra Nevada in the east and the Coast Ranges in the west. The Central Valley is divided into two smaller valleys by the Sacramento-San Joaquin Delta: the Sacramento Valley and the San Joaquin Valley. The Sacramento Valley is located north of the Sacramento-San Joaquin Delta, while the San Joaquin Valley lies to the south (Rosenthal et al. 2007).

The Project site is located within the central part of the San Joaquin Valley. The valley is composed of active alluvial fans, alkali basins, and river floodplains. Historically, the valley

supported a treeless plain with patches of alkali-tolerant annual forbs and grasses (Rosenthal et al. 2007). Wildlife included antelope, deer, and elk, which wintered on the plains, as well as jackrabbits, ground squirrels, and quail (Wallace 1978a).

Prehistoric Setting

The Central Valley prehistoric record is divided into three periods: Paleo-Indian (11,550 to 8,550 cal B.C.[1]), Archaic (8,550 cal B.C. to cal A.D. 1100), and Emergent (cal A.D. 1100 to Historic). The Archaic period is further divided into three sub-periods: Lower Archaic (8,550 to 5,550 cal B.C.), Middle Archaic (5,550 to 550 cal B.C.), and Upper Archaic (550 cal B.C. to cal A.D. 1100) (Rosenthal et al. 2007).

Paleo-Indian (11,550 to 8,550 cal B.C.)

Evidence of human occupation of the Central Valley during the Paleo-Indian period comes primarily from the San Joaquin Valley. Basally thinned and fluted concave base projectile points have been found in three San Joaquin Valley areas: Tracy Lake, the Woolfsen mound, and the Tulare Lake basin. The closest of these locations to the Project site is the Tulare Lake Basin, which is approximately 40 miles to the southeast. Little other evidence of human occupation during the Paleo-Indian period is available for the Central Valley.

Lower Archaic (8,550 to 5,550 cal B.C.)

Lower Archaic occupation of the Central Valley is known mainly from isolated finds located along the ancient shorelines of lakes. Very little archaeological evidence exists for occupation of the valley floor during the Lower Archaic.

Middle Archaic (5,550 to 550 cal B.C.)

The Middle Archaic is characterized by a climatic shift to warmer, drier conditions, similar to present-day conditions. By the Middle Archaic, foothill and valley floor groups were distinct and separate adaptations. Early sites from the Middle Archaic period are more abundant in the foothill areas and are characterized by a large quantity of stone implements designed to exploit acorns and pine nuts (Rosenthal et al. 2007).

Upper Archaic (550 cal B.C. to cal A.D. 1100)

Climatic changes at the start of the Upper Archaic resulted in a cooler, wetter, and more stable environment. During the Upper Archaic period, regional variations were more common and focused on resources that could be processed in bulk, such as acorns, salmon, shellfish, rabbits, and deer. Use of mortars and pestles for food processing was prevalent, except for the valley margins where handstones and millingslabs remained dominant (Rosenthal et al. 2007).

Emergent (cal A.D. 1000 to Historic)

During the Emergent Period, many Archaic Period technologies and cultural traditions disappeared throughout the Central Valley. Practices very similar to those observed by later

[1] The “cal” prefix indicates that the date reported is the result of radiocarbon calibration using tree ring data.

European explorers appeared at this time. Research on Emergent Period sites in the San Joaquin Valley has been limited and only one cultural pattern, the Panoche Complex (circa A.D. 1500 to 1850), has been fully identified (Moratto 1984).

Ethnographic Setting

At the time of European contact, the Central Valley was occupied by speakers of the California Penutian language family, specifically the Yokuts. The Yokuts entered the San Joaquin Valley sometime prior to A.D. 1400, perhaps by force, as indicated by skeletal remains with fatal wounds inflicted by projectile points (Arkush 1993). Historically, Yokuts have been divided into three cultural-geographical groupings: Northern Valley, Southern Valley, and Foothills (Arkush 1993). Based on what has been written about the territorial boundaries among these three cultural-geographical groupings, the Project site is within the ancestral land boundaries (southwestern portion) of the Northern Valley Yokuts people, and appears to be at the juncture of Northern Valley Yokuts and Southern Valley Yokuts territory.

The territory of the Northern Valley Yokuts is defined roughly by the crest of the Diablo Range on the west and the foothills of the Sierra Nevada on the east. The southern boundary is located approximately where the San Joaquin River bends northward and the northern boundary is roughly halfway between the Calaveras and Mokelumne rivers. Populations were concentrated along waterways and on the more hospitable east side of the San Joaquin River (Wallace 1978a). The Southern Valley Yokuts territory included Tulare, Buena Vista, and Kern lakes and the lower portions of the Kings, Kaweah, Tule, and Kern rivers (Wallace 1978b). A large Southern Valley Yokuts village, *Poso de Chane*, was located about 6 miles east of present-day Coalinga (approximately 30 miles south of the Project site). The village was centered on a large watering pool (poso). Later, the area became home to a small Spanish/Mexican agricultural community (Hoover et al. 1990).

Historic Setting

Widespread exploration of the Central Valley by non-indigenous peoples began in the early 1800s when Lieutenant Gabriel Moraga led a Spanish contingent over Pacheco Pass and into the valley; however, no permanent Spanish settlements were established in the San Joaquin Valley (CAGenWeb 2013).

One of the earliest Spanish trails, known as El Camino Viejo (The Old Road), ran north-south through the San Joaquin Valley extending from San Pedro to San Antonio (present-day East Oakland). The trail followed the path of a prehistoric trail and skirted the eastern slope of the Coast Range foothills (about 4 miles east of the Project site). El Camino Viejo was an alternative route to heavily traveled El Camino Real (the Royal Road) and was often the preferred route of those wishing to travel without the knowledge of the Spanish government. The trail became a stagecoach and mail route and also an important route for cattle ranchers. In the valley, the route largely corresponds to modern-day Interstate 5 (Hoover et al. 1990).

Mexico gained independence in 1821 and began secularization of the missions and promoting settlement of Alta California through the issuance of land grants and liberal colonization laws,

which did not prevent foreigners from settling in Mexican territory. This allowed for a significant number of Euro-Americans to gain a foothold in Alta California. In an attempt to prevent continued foreign incursion and promote a greater Mexican presence in the interior, Mexico issued the 1840 Law of Colonization and encouraged the establishment of cattle ranches in the Central Valley; however, few Mexican land grants were issued in the San Joaquin Valley and only two that included parts of Fresno County (Hoover et al. 1990; Shumway 2007).

In 1848, gold was discovered at Sutter's Mill resulting in a large influx of immigrants hoping to make their fortunes. After cessation of the Mexican-American War in the same year, California was ceded to the United States, officially becoming a state in 1850. Mexico's public lands became United States public lands and were surveyed, sectioned, and made available for sale/settlement (Hoover et al. 1990; Shumway 2007; State Lands Commission 1982).

The federal government passed legislation in the mid-1800s to promote settlement of the western United States and dispose of surplus public land. The Homestead Act of 1862 allowed settlement of public lands, requiring only residence, improvement, and cultivation of the land. A claim for a 160-acre parcel could be made by anyone who was over the age of 21, head of a household, and paid an $18 fee. The act allowed single women, former slaves, and new immigrants an opportunity to own a piece of land, provided they improved and lived on the land for 5 years. While these laws were designed to give individual settlers and families access to land ownership, many land speculators and farmers/ranchers manipulated them to obtain huge tracts of land for little cost, particularly in the San Joaquin Valley. The railroads also benefited from federal laws, which granted alternating odd-numbered sections within 20 miles of a projected rail line in order to facilitate rail expansion (Caltrans 2007; Orsi 2005).

Fresno County was organized in 1856 from a portion of Mariposa County. The development of the Central Pacific Railroad through the County in 1872 resulted in the creation of the town of Fresno, which became the County seat in 1874. The original County seat was located in Millerton, 25 mile north of Fresno, but the decision was made to move the County seat south to gain access to the railroad (Hoover et al. 1990).

With the waning of the mining industry in the mid-1860s, many turned to raising cattle and sheep in the valley, including many Basque and Portuguese immigrants who had been shepherds in their native land (Graves 2004; Miller 2013). Sheep primarily were herded on the uninhabited west side, feeding on wild alfalfa or rented to stubble land.

After the decline of the cattle industry in the 1870s, the grain industry rose to prominence. In 1889, the San Joaquin Valley wheat crop topped 40 million bushels, making it the largest crop in the United States except that produced by the entire state of Minnesota. Over the ensuing years, a failure to rotate crops depleted the soil and yields decreased. This, coupled with a drop in grain prices and the advancement of irrigation, opened up the opportunity for viticulture and other horticultural pursuits to expand (Ryan and Breschini 2010; Vandor 1919). During the latter part of the 19th century, agricultural colonies contributed heavily to the growth of Fresno County. These colonies established numerous extensive canal systems in order to provide water to the region's farmers (Hattersley-Drayton 2009).

The early 1900s saw the rise of the dairy farmer in the San Joaquin Valley (Caltrans 2007). The decline of the wool industry from the 1880s-1900s left many San Joaquin Valley Portuguese sheepherders unemployed and many turned to the growing dairy farms. Most began as milk hands, saving income until they could start their own dairy farms. By the 1930s, Portuguese dairy farms were well established in the valley (Graves 2004).

In the mid-1930s, the Great Depression, drought, and poor economic and agricultural conditions in the southern and plains states led to a mass migration of "Dust Bowl refugees" to California. Approximately 300,000-400,000 migrants from Oklahoma, Texas, Arkansas, Missouri, and other states moved to California, drawn by the promise of employment and a better life (Gregory, n.d.). Many ended up in the San Joaquin Valley to work as field hands; by 1950, as many as one in four residents of the San Joaquin Valley had emigrated from Oklahoma, Texas, Arkansas, or Missouri (Gregory 1989).

Today, a wide variety of agricultural enterprises exist in the San Joaquin Valley, with farms ranging from small to large industrial operations and producing crops such as fruits, nuts, barley, beans, corn, hay, beets, wheat, and cotton. Livestock, including cattle and poultry, continues to be raised in the San Joaquin Valley (Caltrans 2007).

4.6.1.3 Regulatory Setting

Federal

National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the National Historic Preservation Act (NHPA), as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR §60.2). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria, along with being at least 50 years old and possessing integrity to convey its significance (U.S. Department of the Interior 1995):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Resources identified as eligible for or listed in the NRHP are automatically considered eligible for listing in the California Register of Historical Resources.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 protects the rights of Native Americans to freedom of expression of traditional religions (24 U.S.C. §1996). This act established "the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions… including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites."

State

California Register of Historical Resources

Created in 1992 and implemented in 1998, the California Register of Historical Resources (CRHR) is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria, and retains sufficient integrity to reflect its historical significance:

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in history or prehistory.

Typically, an archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. However, archaeological sites also may be recommended as eligible under CRHR Criteria 1, 2, and/or 3.

As with traditional cultural properties in the NRHP, identification of tribal cultural resources for the CRHR emphasizes a place or feature's value and significance to living communities. AB 52, summarized below, further clarified this designation process.

California Environmental Quality Act

Under CEQA (Public Resources Code §21084.1), a project would have a significant effect on the environment if it causes a substantial adverse change in the significance of an historical resource.

The CEQA Guidelines (14 Cal. Code Regs. §15064.4) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, then the provisions of Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.4 apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, then the lead agency must identify potentially feasible measures to mitigate these effects (14 Cal. Code Regs. §§15064.4(b)(1), 15064.4(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA Guidelines, then the site may be treated in accordance with CEQA Section 21083. As defined in Public Resources Code Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site, for 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:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in CEQA Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Public Resources Code §21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

If an archaeological resource is neither a unique archaeological nor a historical resource, then the effects of the project on those resources shall not be considered a significant effect on the environment (14 Cal. Code Regs. §15064.4(c)(4)).

Public Resources Code

Assembly Bill 52 (AB 52), enacted in September 2014, amended CEQA to explicitly recognize that California Native American tribes have expertise with regard to their tribal history and practices. AB 52 established a new category of cultural resources known as tribal cultural resources to assure that lead agencies consider tribal cultural values when evaluating potential impacts on cultural resources. Public Resources Code Section 21074(a) defines a tribal cultural resource as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - included or determined to be eligible for inclusion in the California Register; or
  - included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k).[2]
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c).[3] In applying these criteria, the lead agency would consider the significance of the resource to a California Native American tribe.
- A cultural landscape that meets the criteria of CEQA Section 21074(a)[4] also is a tribal cultural resource if the landscape is geographically defined in terms of the size and scope.
- An historical resource as described in CEQA Section 21084.1,[5] a unique archaeological resource as defined in CEQA Section 21083.2,[6] or a non-unique archaeological resource as defined in CEQA Section 21083.2[7] may also be a tribal cultural resource if it meets the criteria of CEQA Section 21074(a).

The Public Resources Code requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (Public Resources Code §§21074, 21083.09), in recognition that archaeological resources have cultural values beyond their ability to yield data

2 Public Resources Code Section 5020.1(k) defines "local register of historical resources" as "a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution."

3 The criteria set forth in Public Resources Code Section 5024.1(c) include whether a 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 in 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."

4 A cultural landscape meets the criteria of Public Resources Code Section 21074(a) if it either is "included or determined to be eligible for inclusion in the California Register of Historical Resources" or is "included in a local register of historical resources" pursuant to Section 5020.1(k).

5 Public Resources Code Section 21084.1 defines an "historical resource" as "a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources."

6 Public Resources Code Section 21083.2(g) defines "unique archaeological resource" as "an archaeological 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."

7 Public Resources Code Section 21083.2(h) defines "nonunique archaeological resource" as "an archaeological artifact, object, or site which does not meet the criteria in subdivision (g)."

important to prehistory or history. Public Resources Code Section 21074 also defines "tribal cultural resources" and requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (Public Resources Code §§21080.3.1, 21080.3.2, 21082.3).

Native American Heritage Commission

The Native American Heritage Commission (NAHC) identifies and manages a catalog of places of special religious or social significance to Native Americans. This database, known as the Sacred Lands File, is a compilation of information on known graves and cemeteries of Native Americans on private lands and other places of cultural or religious significance to the Native American community. The NAHC also performs other duties regarding the preservation and accessibility of sacred sites and burials and the disposition of Native American human remains and burial items.

Public Resources Code Sections 5097.9 through 5097.991 describe the duties and role of the NAHC and requires the cooperation of State and local agencies in carrying out their duties with respect to Native American resources.

Health and Safety Code, Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

Other Relevant State Regulations

Sections of the Public Records Act (Government Code §§6254(r), 6254.10), Health and Safety Code (§7050.5), Penal Code (§622.5), and Public Resources Code (§622.5) provide guidance for protection of archaeological resources and human remains. These codes provide protection from unauthorized excavation, looting, or vandalism; guidance following discovery of human remains; penalty for injuring or destroying objects of historic or archaeological interest; and penalty for unauthorized disturbance or removal of archaeological or historical features.

Local

Fresno County 2000 General Plan

The Fresno County 2000 General Plan (2000) Open Space and Conservation Element contains several objectives and policies relevant to the protection of cultural resources within the Project site and surrounding area. The Historical, Cultural, and Geological Resources section of the Open Space and Conservation Element provides policies directing the protection of historical and archaeological resources within the County.

> **Goal OS-J:** To identify, protect, and enhance Fresno County's important historical, archeological, 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.

Policy 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.

Policy OS-J.2: Historic Resources Consideration. The County shall consider historic resources during preparation or evaluation of plans and discretionary development projects.

Policy OS-J.14: Sites Protection and Mitigation. The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

4.6.1.4 Cultural Resources and Tribal Cultural Resources Identified within the Study Area

Identification of Known Cultural Resources

The research investigations completed for the Project consisted of a records search of the Project site and a 1-mile radius buffer, by the Southern San Joaquin Valley Information Center (SSJVIC), located at California State University, Bakersfield. The SSJVIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural resource records and reports for Fresno County. Staff at the SSJVIC conducted the records search at the request of Dudek (Records Search File No. 20-109). As part of the records search, the following federal and State of California inventories were reviewed:

- California Inventory of Historic Resources (California Office of Historic Preservation, 1976);
- California Points of Historical Interest (California Office of Historic Preservation, 1992 and updates);
- California Historical Landmarks (California Office of Historic Preservation, 1996);
- Built Environment Resources Directory for Fresno County (California Office of Historic Preservation, as of March 2020); and
- Archaeological Determinations of Eligibility for Fresno County (California Office of Historic Preservation, as of 2013)

Historic research also was performed to better understand the history of land use of the Project site. This research consisted of reviewing historic literature, topographic maps, and aerial imagery. SSJVIC records indicate that four previous technical studies have been performed within the records search area, and, of these, one of the studies intersected portions of the Project site. The records search also indicated that no cultural resources previously have been recorded within the Project site or the 1-mile buffer.

Native American Contact

Fresno County maintains a list for AB52 consultation that includes four tribes: Table Mountain Rancheria, Santa Rosa Rancheria Tachi-Yokut Tribe, Dumna Wo Wah, and Picayune Rancheria of Chukchansi Indians. Letters to the tribes were mailed on May 29, 2020. No tribes have responded to the County's consultation request.

Additionally, Dudek contacted the Native American Heritage Commission (NAHC) on February 27, 2020, to request a search of the Sacred Lands File. The NAHC responded on February 28, 2020, that the search failed to identify any Native American resources in or near the Project site and provided a list of 13 individuals from 10 tribal organizations to contact that may have additional information (Burns et al. 2020). Dudek sent tribal outreach letters on May 21, 2020, to the individuals and organizations identified by the NAHC. As of November 2020, only the Santa Rosa Rancheria Tachi-Yokut Tribe (Santa Rosa Rancheria) has responded. Santa Rosa Rancheria requested that a cultural survey and records search be conducted for the Project site, and that the results report be submitted to the tribe for review. The Cultural Resources Inventory Report (Burns et al. 2020) and the Historical Resources Evaluation Report (Steffen et al. 2020) were sent via email to the Santa Rosa Rancheria on August 6, 2021. As of February 2023, no other comments requesting consultation have been received.

Archaeological Field Surveys

Dudek conducted an intensive-level pedestrian field survey of accessible portions of the Project site between March 30 and April 5, 2020. The archaeological crew surveyed the entire Project site utilizing transects spaced 15 meters wide except for the Tranquillity Switching Station, which was not surveyed specifically in connection with this Project due to safety access restrictions.[8] The Project site consisted of open, tilled (row crops) agricultural fields with no crops present at the time of the survey. Ground surface visibility ranged from excellent (100 percent) in recently disked areas to low (less than 15 percent) in areas with dense grasses. The area is actively mechanically plowed, and the Project site has experienced extended history of agricultural use, which has disturbed the upper layer of soil (Burns et al. 2020).

The pedestrian survey did not identify any cultural resources within the Project site. Five historic-era built environment resources were identified adjacent to the Project site. Dudek (Steffen et al. 2020) evaluated the five historic-era architectural resources consisting of one commercial buildings complex at 32650 West Adams Avenue, and four farm/ranch complexes at 32588 West Adams Avenue, 31955 West Adams Avenue, 31055 West Adams Avenue, and 30915 West Adams Avenue. Steffen et al. recommended that none of the resources were eligible for the NRHP or the CRHR. Therefore, these resources are not considered historic properties or historical resources.

[8] The Tranquillity Switching Station site is developed and was surveyed prior to its construction in connection with the Tranquillity Solar Generating Facility Project (Fresno County 2014a, 2014b).

Potential for Unknown Buried Cultural Resources

The ground surface of the Project site has been highly disturbed by previous agricultural activities. The United States Geological Survey (USGS) characterized deposits in the region as Quaternary alluvium and marine deposits. No major rivers, streams, or drainages flow through the Project site.

Geoarchaeological sensitivity analysis presented in *Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9* (Meyer et al. 2010) provides a broad overview of geoarchaeological information for Fresno, Kern, Kings, Madera, Tulare, Inyo, and Mono counties. Meyer and colleagues reviewed the Soil Survey Geographic Database and the State Soils Geographic Database and compiled previously reported radiocarbon dates, analyses of landform superposition, and field examinations of stratigraphic relationships. They constructed a regional model to predict archaeological site locations based on two environmental factors – proximity to water and landform slope. The model assumes that human activity in the past, and therefore archaeological site formation, occurred more frequently in flat areas close to water sources, such as rivers, lakes, and springs. Compared with sloped landforms, flat landforms would be expected to be more attractive for occupation, as well as being less susceptible to gravity-driven processes such as landslides capable of destroying archaeological deposits. According to this model based on geomorphology, proximity to water, and landform slope, the Project site has a moderate sensitivity for buried archaeological resources (Meyer et al. 2010).

The Project site is situated within an area of late Holocene (4,000-2,000 cal. Before Present [B.P.]) and latest Holocene (2,000-150 cal. B.P.) deposition, which has been deposited over the course of known human occupation in the region. Therefore, there is a possibility that the deposition of alluvium has buried prehistoric archaeological sites that once existed on the surface. However, given the lack of nearby water sources or other natural resources, it is unlikely that large, permanent settlements would have occurred within the Project site. The nearest reliable water sources, Fresno Slough, would have been approximately 3 miles away from the Project site. In addition, no prehistoric resources have been identified in the vicinity of the Project site.

While the potential for buried prehistoric archaeological deposits in neighboring regions has been characterized as high by Meyer et al. (2010), such broad analyses must be tempered by local conditions. The Project site is located in an area that has a sparse record of prehistoric occupation, as supported by the records search. Moreover, while agricultural fields extensively disturb archaeological deposits, they do not erase them; to the contrary, such activities often bring buried deposits to the surface. No such deposits were identified in the Project site during the surface surveys. As such, the Project site is characterized as having a low potential for discovering significant archaeological deposits. Nevertheless, there is some possibility that buried archaeological deposits may be encountered during Project-related excavation, which is proposed at depths of up to 10 feet below ground surface for the installation foundations for the solar panels, which include steel piles being placed about 6 to 10 feet below ground surface.

4.6.2 Significance Criteria

The Project would result in significant impacts to cultural resources or tribal cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5;

c) Disturb any human remains, including those interred outside of formal cemeteries.

d) 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

   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 Public Resources Code Section 5024.1(c). In applying the criteria set forth in Public Resources Code Section 5024.1(c), Shasta County, as the CEQA lead agency, has considered the significance of the resource to a California Native American tribe.

4.6.3 Direct and Indirect Effects

4.6.3.1 Methodology

To evaluate the Project's potential effects on significant cultural resources and tribal cultural resources, including prehistoric and historic archaeological sites, a cultural resources characterization and evaluation of the Project site was undertaken. This included a literature review, a Native American outreach program, geoarchaeological review, and field survey for areas of potential permanent and temporary impacts where facilities would be installed (Dudek 2020). The purpose of this evaluation was to identify any cultural resources and tribal cultural resources that may be present within the Project site. Additionally, Fresno County engaged in consultation with local tribes to solicit input on potential tribal cultural resources within, or in proximity to, the Project site.

Impacts on cultural resources and tribal cultural resources could result from Project-related ground-disturbing activities, including excavation, grading, trenching, vegetation clearance, the operation of heavy equipment, or other surface and sub-surface disturbance that could damage or destroy surficial or buried archaeological resources, including prehistoric and historic materials or human burials.

4.6.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with mitigation incorporated for each of the criteria identified in Section 4.6.2 in the event of inadvertent discovery of previously unidentified resources. The mitigation recommended in each instance would apply equally to the subset of the Project that is the PG&E infrastructure.

Criterion a) Whether the Project would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

Criterion b) Whether the Project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

Construction of the Project would not impact known historical or unique archaeological resources, because there are no resources meeting CEQA's definition of an historical resource or unique archaeological resource known to be located within the Project site. No archaeological resources were identified during the 2020 cultural resources records search and surveys conducted for the Project site. Therefore, the Project would result in no impact to known historical or unique archaeological resources.

Impact 4.6-1: Ground disturbing activities associated with the Project could cause a substantial adverse change in the significance of a newly-discovered historical or archaeological resource, as defined in CEQA Guidelines Section 15064.5. (*Less than Significant with Mitigation Incorporated*)

Construction of the Project could impact previously unknown, buried archaeological resources through ground-disturbing activities to prepare the site and install the solar facility and associated structures. Additionally, subsurface excavation required to install a groundwater well may disturb intact soils. According to the geoarchaeological review, the Project site has low sensitivity for buried archaeological resources based on the geomorphology, proximity to water, and landform slope. The lack of nearby water sources, particularly, suggests long-term habitation sites are unlikely. Nonetheless, given that the general vicinity is covered by Holocene alluvial deposits, which have been deposited over the course of known human occupation in the region, there is a possibility that the deposition of alluvium has buried prehistoric archaeological sites that once existed on the surface. Therefore, although overall there is a low probability of significant prehistoric resources existing within the Project site, there nevertheless exists the possibility that buried archaeological resources may be encountered during ground disturbing activities.

In the event that unknown archaeological resources are discovered during ground-disturbing activities required for Project construction, operation and maintenance, or decommissioning and site restoration, significant impacts could occur. With the implementation of **Mitigation Measure 4.6-1**, which requires the retention of a qualified archaeologist and cultural resources awareness training, and **Mitigation Measures 4.6-2**, which governs procedures in the event of inadvertent discovery of archaeological materials, impacts to any newly-discovered historical or unique archaeological resources would be mitigated to less than significant.

Project decommissioning and site restoration would not impact historical or unique archaeological resources. Ground disturbance associated with decommissioning would occur within soils previously disturbed by construction and subject to **Mitigation Measure 4.6-1** and **4.6-2**. Therefore, no impact to historical and unique archaeological resources would result from decommissioning.

Mitigation Measure 4.6-1: Cultural Resources Awareness Training

The Project Owner shall retain a qualified archaeologist to carry out all mitigation measures related to archaeological and historical resources.

Prior to the start of any ground-disturbing activities, the Project owner shall ensure that the qualified archaeologist has conducted a Cultural Resources Awareness Training for all construction personnel working on the Project. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified archaeologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. A sign-in sheet shall be completed, retained by the Project construction contractor for the duration of Project construction to demonstrate attendance at the awareness training, and provided to the County upon the completion of Project construction.

Mitigation Measure 4.6-2: Inadvertent Discovery of Cultural Resources

In the event archaeological materials are encountered during Project activities, the designated Project construction contractor shall immediately cease any ground disturbing activities within 100 feet of the find. The qualified archaeologist (and a Native American-designated representative if the resource is Native American-related) shall evaluate the significance of the resources for California Register of Historical Resources eligibility and recommend appropriate treatment measures to the County and the Project Owner. Per CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall (in coordination with a Native American-designated representative if the resource is Native American-related) develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric, tribal cultural resources, or Native American in nature. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the County and to the Southern San Joaquin Valley Information Center. Construction can recommence based on direction of the qualified archaeologist with the County's agreement.

Significance after Mitigation: Less than Significant. The implementation of Mitigation Measure 4.6-1 and Mitigation Measure 4.6-2 would reduce the impact to a less-than-significant level because if any cultural resources are identified during Project construction, these measures establish a plan to evaluate the resource for eligibility and, if necessary, prepare a treatment plan to minimize impacts to the resource.

Criterion c) Whether the Project would disturb any human remains, including those interred outside of formal cemeteries.

Impact 4.6-2: Ground disturbing activities associated with the Project could result in damage to previously unidentified human remains. (*Less than Significant with Mitigation Incorporated*)

As described above, there is no indication that the Project site has been used for human burial purposes in the recent or distant past. However, in the event that human remains are discovered, including those interred outside of formal cemeteries, the human remains could be inadvertently damaged, which would be a significant impact for the purposes of CEQA. Implementation of **Mitigation Measure 4.6-3** would ensure that any human remains encountered are appropriately addressed, thus reducing any potential impacts to a less-than-significant level.

Operation and maintenance of the Project would cause no impact to human remains because no ground disturbance would occur at depths greater than those reached during construction.

Decommissioning and site reclamation of the Project similarly would not impact human remains. Ground disturbances associated with these activities would occur within soils previously disturbed by construction and subject to **Mitigation Measure 4.6-3**. Therefore, no impact to human remains would result.

Mitigation Measure 4.6-3: Inadvertent Discovery of Human Remains

If human remains are uncovered during Project activities, the Project owner shall immediately halt work, contact the Fresno County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.4 (e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c), and Public Resources Code 5097.98 (as amended). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per Public Resources Code Section 5097.98, and the Project Applicant shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further activity under the landowner has discussed and conferred, as prescribed in Public Resources Code Section 5097.98 with the MLD regarding their recommendation for the disposition of the remains, taking into account the possibility of multiple human remains.

Significance after Mitigation: Less than Significant. The specific state law/regulations regarding proper handling of previously unknown human remains encountered during construction are specified above and the Project will comply with the state law to avoid significant impacts on human remains. In conjunction with the training and monitoring protocols identified in in Mitigation Measures 4.6-1 and 4.6-2, potential impacts to unknown human remains is less than significant.

Criterion d.1) Whether the Project would 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 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).

Criterion d.2) Whether the Project would 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 a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c).

Impact 4.6-3: Ground disturbing activities associated with the Project could cause a substantial adverse change to previously unknown archaeological resources that are also tribal cultural resources, as defined in Public Resources Code Section 21074(a). (*Less than Significant with Mitigation Incorporated*)

The results of the records search conducted at the SSJVIC identified no prehistoric archaeological resources within 1-mile of the Project site, and no prehistoric archaeological material was identified during the field survey of the Project site by Dudek (2020). As previously noted, a February 28, 2020, letter from the NAHC stated that a review of the Sacred Lands File failed to identify any Native American resources in the vicinity of the Project. Tribal consultation has not identified any resources, or areas of concern, within the Project site. In light of the nature of the Project and the disturbed character of the site, types of tribal cultural resources, if any, are anticipated to be subsurface prehistoric archaeological resources, including human remains. As further described above, no such prehistoric resources have been documented within, or in the immediate vicinity of, the Project site. If not discovered prior to development, such resources could be damaged or destroyed through earthwork, ground disturbance, or other subsurface construction and excavation activities. Damage to or loss of tribal cultural resources would be a potentially significant impact. Implementation of **Mitigation Measures 4.6-1**, **4.6-2**, and **4.6-3** would ensure that any encountered archaeological resources that are considered tribal cultural resources would be appropriately addressed, thus reducing any potential impacts to a less-than-significant level.

Operation, maintenance, and decommissioning of the Project would cause no impact to tribal cultural resources.

Implement Mitigation Measures 4.6-1, **4.6-2**, and **4.6-3**.

Significance after Mitigation: Less than significant. Implementation of Mitigation Measures 4.6-1, 4.6-2, and 4.6-3, would reduce the potential impact to a less-than-significant level because all construction personnel involved in ground disturbing activities would be trained to identify cultural resources and any potential archaeological resources identified, that could be considered tribal cultural resources, would be

evaluated and treated including consulting with Native American representatives in determining appropriate treatment.

PG&E Infrastructure

To interconnect the Project with the electrical grid, PG&E would extend an existing 230 kV transmission line by up to 0.2 mile on approximately six new or existing tubular steel poles approximately 140 feet high. This analysis assumes that construction of the new transmission line poles would require excavation at depths of approximately 16-20 feet below ground surface.[9] The construction activities associated with the PG&E infrastructure, including the utility poles, would be required to comply with, and adhere to, laws pertaining to the disposition of cultural resources and human remains including: Health and Safety Code Sections 7052 and 7050.5, Public Resources Code Section 21074(a) [AB 52], and CEQA Guidelines Section 15064.4. The PG&E transmission line also would be required to comply with the same cultural resources mitigation measures as the rest of the Project components. Subsurface excavation required for the PG&E infrastructure (e.g., to install the power poles) may disturb intact soils. Therefore, because cultural resources and/or human remains could be inadvertently discovered, the implementation of Mitigation Measures 4.6-1, 4.6-2, and 4.6-3 would reduce the potential impact of any unanticipated cultural resources and/or human remains to a less-than-significant level. The combined impacts of the Project and PG&E infrastructure would be less than significant.

4.6.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Compared to the Project, Alternative 1 would entail 20-percent less construction and associated ground disturbing activities. The decreased disturbance footprint would result in a decreased potential for disturbance of previously unknown cultural resources, including archaeological resources and human remains. However, the same mitigation measures required for the Project also would be needed under Alternative 1 to reduce the potential significant impacts of ground-disturbing activities needed to construct, operate and maintain, or decommission the Reduced Acreage Alternative. Although the scale of ground disturbance would be reduced under Alternative 1, the same impact determinations and the same mitigation measures (as described for the Project) would be needed to reduce impacts under this alternative. With implementation of Mitigation Measures 4.6-1 through 4.6-3, impacts would be reduced to less than significant levels. *(Less than Significant with Mitigation)*

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. No structures would be erected, and no ground disturbance would occur. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left

[9] Poles typically are set into the ground at depths equivalent to 10 percent of the overall height plus 2 feet, except in questionable soil conditions (USI 2014). Here, where the poles would be up to 140 feet tall, the associated depth of exaction would be 16 feet. An additional 4 feet has been added to assure a conservative analysis.

fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would cause no impact to cultural resources or tribal cultural resources.

4.6.4 Cumulative Analysis

The geographic scope for cumulative impacts to cultural resources and tribal cultural resources comprises a 5-mile radius from the Project site. The geographic scope of analysis is appropriate because the archaeological and historical resources within this radius are expected to be similar to those that occur on the Project site because their proximity, similar environments, landforms, and hydrology are expected to have resulted in similar land-uses over time. Based on the professional experience of the EIR preparers and the tribes, research, and the prehistoric context, the area within this 5-mile radius of the Project site may contain a significant archaeological and historical record that has not been well-documented or recorded. Therefore, this analysis conservatively assumes that the land within this area contains cultural resources or tribal cultural resources that are not yet known.

The temporal scope for cumulative impacts to cultural resources and tribal cultural resources would be the duration of the Project's ground-disturbing activities. In this context, the incremental impacts of the Project could combine with similar incremental impacts of past, other present, and reasonably foreseeable future projects within the 5-mile radius of the site to cause or contribute to a significant cumulative impact if any of the criteria described in Section 4.6.2, *Significance Criteria*, were exceeded.

There is no indication in Section 4.6.1.2, *Environmental Setting*, or elsewhere in the Project record of any existing significant adverse condition relating to cultural resources or tribal cultural resources in the geographic area of cumulative consideration to which the Project or alternatives could contribute; further, the Project's incremental contribution to cumulative effects, when combined with the incremental impacts of other past, present, and reasonably foreseeable future projects would not cause a significant cumulative impact. Project-level mitigation measures would require cessation of activities and buffering of finds in a manner that would substantially reduce the incremental contribution of the Project or alternatives to any potential cumulative impact. Similarly, other projects in the cumulative scenario would be subject to regulatory controls such as Public Resource Code provisions protecting archaeological resources and human remains, as presented in the regulatory setting. Thus, even if it conservatively is assumed that a potential significant cumulative effect exists, the negligible impact remaining after the implementation of recommended mitigation measures would not be cumulatively considerable. With implementation of such measures, the Project's potential significant impact would be reduced to a less-than-significant level; therefore, the cumulative (less than significant) contribution would not result in a significant cumulative impact to archaeological and tribal cultural resources.

There is no indication of any existing significant adverse condition relating to the discovery of human remains in the geographic area of cumulative consideration to which the Project, the alternatives, or any of the cumulative projects could contribute. The Project would have a less than significant cumulative impact related to the discovery of human remains.

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4.7 Energy

This section identifies and evaluates issues related to electricity and transportation fuels ("Energy" for purposes of this EIR) in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive scoping comments pertaining to energy (see Appendix A, *Scoping Report*).

This analysis is based in part on the *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Sonrisa Solar Project* prepared by Dudek (Appendix E-1). The preparers of this Draft EIR independently reviewed this and other materials prepared by or on behalf of the Applicants and determined them to be suitable with supplemental information added relative to construction-related water truck trips (Appendix E-2, *Construction Water Truck Emissions*) and fuel use estimates (Appendix E-3, *Sonrisa Project Fuel Use*) for reliance on (in combination with other materials included in the formal record) in the preparation of this Draft EIR (ESA 2021).

4.7.1 Setting

4.7.1.1 Study Area

The study area for Project impacts related to energy includes the state for purposes of overall energy use and energy-related plans, the PG&E service area for purposes of electrical service, Fresno County for purposes of fuel consumption, and the area surrounding the Project site as it relates to energy generation, energy consumption, and fuel consumption.

4.7.1.2 Environmental Setting

State Energy Setting

Total energy usage in California was 7,802 trillion British Thermal Units (Btus) in 2019 (the most recent year for which specific data are available), which equates to an average of 198 million Btu per capita. These figures place California second among the nation's 50 states in total energy use and 50th in per capita consumption (EIA 2021a).

Electricity

In 2019, total system electricity generation for California was 277,704 gigawatt-hours (GWh), down 2.7 percent from 2018's total generation of 285,488 GWh. Approximately 72 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 28 percent, is imported from the Pacific Northwest and the Southwest. In 2019, California's in-state electricity generation was derived from natural gas (43 percent); large hydroelectric resources (17 percent); nuclear sources (8 percent); oil and coal (<1 percent); and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (32 percent). Of the approximately 64,336 GWh generated from renewable sources in the state, solar-generated electricity made up the highest proportion (44 percent), followed by wind

(21 percent), geothermal (17 percent), biomass (9 percent), and small hydroelectric (8 percent) (CEC 2021a).

In 2019, solar PV and solar thermal power plants produced 28,463 GWh of energy or 14.2 percent of California's in-state generation portfolio. California had a total of 748 operating solar power plants, with an installed capacity of about 12,338 megawatts (MW) in 2019. Solar plants in Fresno County accounted for approximately 848 MW of the installed capacity (approximately 7 percent) with a net generation of 1,980,600 GWh (CEC 2021b). In all, California produced more than 40 percent of total solar PV electricity in the U.S. in 2019 (EIA 2021a).

Transportation Fuels

Gasoline and diesel, both derived from petroleum (also known as crude oil), are the two most common fuels used for vehicular travel. Approximately 85 percent of the petroleum consumed in California is used in the transportation sector (EIA 2021a). In 2019, approximately 30 percent of California’s crude oil was produced within the state, about 12 percent was produced in Alaska, and the remaining 58 percent was produced in foreign lands (CEC 2021b).

In 2019, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 15.4 billion gallons of gasoline (CDTFA 2021a), and taxable diesel fuel sales accounted for approximately 3.1 billion gallons of diesel fuel (CDTFA 2021b). Statewide, there was an overall decrease in gasoline and diesel consumption from 2007 to 2011 due to the economic recession, but consumption has increased since then. However, the economic shutdown associated with the coronavirus outbreak decreased gasoline and diesel consumption throughout 2020.

California refineries provide nearly all of the gasoline, diesel, and jet fuel California needs, while also providing substantial fuel to the Nevada and Arizona markets (CEC 2017). Refineries in California often operate at or near maximum capacity because of the high demand for petroleum products. When unplanned refinery outages occur, replacement supplies must be brought in by marine tanker from refineries in the state of Washington or on the U.S. Gulf Coast. California requires that all motorists use, at a minimum, a specific blend of motor gasoline called CaRFG (California Reformulated Gasoline) as part of an overall program to reduce emissions from motor vehicles. Refineries in several other countries can also supply CaRFG, although it can take several weeks to locate and transport replacement motor gasoline that conforms to California’s strict fuel specifications (EIA 2021a). As a result, unplanned outages often result in a reduction in supply that causes prices to increase, sometimes dramatically. The severity and duration of these price spikes depend on how quickly the refinery issue can be resolved and how soon supply from alternative sources can reach the affected market (EIA 2015).

Most petroleum supply disruptions or shortage events are resolved by the energy industry before they become significant. However, there are instances where the severity and scope of disasters require additional actions by the government to help facilitate and coordinate response and recovery efforts (NASEO 2018).

Regional and Local Setting

PG&E is an investor-owned utility company that provides electricity supplies and services throughout a 70,000 square-mile service area that extends from Eureka in the north, to Bakersfield in the south, and from the Pacific Ocean in the west, to the Sierra Nevada mountains in the east. Fresno County is within PG&E's service area for electricity. Operating characteristics of PG&E's electricity supply and distribution systems are provided below. The regional consumption of transportation fuels is also discussed.

PG&E Electric Utility Operations

PG&E provides "bundled" services (i.e., electricity, transmission, and distribution services) to most of the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. In recent years, PG&E has improved its electric transmission and distribution systems to accommodate the integration of new renewable energy resources, distributed generation resources, and energy storage facilities, and to help create a platform for the development of resilient grid technologies (PG&E 2021a).

In 2020, PG&E generated and/or procured a total of 35,838 GWh of electricity.[1] Of this total, PG&E owns approximately 7,662 MW of generating capacity, itemized below (see **Table 4.7-1**). The remaining electrical power is purchased from other sources in and outside of California.

TABLE 4.7-1
PG&E-OWNED ELECTRICITY GENERATING SOURCES (2019)

Source	Generating Capacity (MW)
Nuclear (Diablo Canyon-2 reactors)	2,240
Hydroelectric	3,867
Fossil Fuel-Fired	1,400
Fuel Cell	3
Solar Photovoltaic (13 units;12 in Fresno County, 1 in Kings County)	152
Total	7,662

SOURCE: PG&E 2021a

Renewable Energy Resources

California law requires load-serving entities, such as PG&E, to gradually increase the amount of renewable energy they deliver to their customers. This program, known as the Renewables Portfolio Standard (RPS) program, requires the amount of renewable energy that must be delivered by most load-serving entities to be at least 33 percent of total annual retail sales by 2020, at least 60 percent by 2030, and 100 percent by 2045.

[1] This amount excludes electricity provided to direct access customers and Community Choice Aggregation (CCA) entities who procure their own supplies of electricity.

Renewable generation resources, for purposes of the RPS program, include bioenergy such as biogas and biomass, certain hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. As shown in **Table 4.7-2**, during 2020, 35.6 percent of PG&E's energy deliveries were from renewable energy sources (PG&E 2021a).

TABLE 4.7-2
PG&E 2020 RENEWABLE ENERGY SOURCES

Source	Percent of Total Energy Portfolio
Solar	16.1
Wind	12.9
Bioenergy	2.8
Geothermal	2.6
RPS-Eligible Hydroelectric	1.2
Total	**35.6**

SOURCE: PG&E 2021a

Electricity Consumption

Table 4.7-3 shows electricity consumption by sector in the PG&E service area based on the latest available data from the California Energy Commission (CEC). As shown in the table, PG&E delivered approximately 78 billion kilowatt-hours (kWh) in 2019, of which approximately 9.7 billion kWh were consumed by the industrial sector.

TABLE 4.7-3
ELECTRICITY CONSUMPTION IN PG&E SERVICE AREA (2019)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh (GWh)							
4,490	29,560	4,349	9,710	1,642	28,014	308	78,072

SOURCE: CEC 2021c

In Fresno County, approximately 7.4 billion kWh of electricity was consumed in 2019, with approximately 4.6 billion kWh consumed by non-residential uses (CEC 2021c).

Local Energy Infrastructure

Existing solar energy facilities operate to the south and east, including the existing Tranquillity and Adams East solar projects. The Tranquillity Solar Project is located south of the Project site and includes eight power blocks of solar arrays, eight electrical substations, up to 200 MW of on-site energy storage, and other infrastructure with the capacity to generate up to 400 megawatts alternating current (MW_{AC}). The Adams East Solar Project is surrounded on three sides by the Project site; it has the capacity to generate approximately 19 MW_{AC}.

Existing electrical infrastructure in the Project vicinity includes transmission lines and PG&E's Tranquillity Switching Station. The existing Helm-Panoche/Panoche-Kearney 230 kilovolt (kV) transmission lines also run generally east-west from the Tranquillity Switching Station. Another transmission line less than 100 kV is located northeast of the Project site that runs along State Route 33 and bends to the east at West South Avenue, adjacent to the Adams East Solar Project (PG&E 2021b).

Gasoline and Diesel

The CEC estimates that 347 million gallons of gasoline and approximately 135 million gallons of diesel were sold in 2020 in Fresno County and that there are 365 gasoline stations in the County (CEC 2020b).

4.7.1.3 Regulatory Setting

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA, 42 USC §8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements. NECPA established energy-efficiency standards for consumer projects and includes, among other things, energy-efficiency standards for new construction.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005 (42 USC §13201 et seq.) sets equipment energy efficiency standards and seeks to reduce reliance on nonrenewable energy resources and provide incentives to reduce current demand on these resources. For example, under the act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; and constructing energy-efficient buildings.

Energy and Independence Security Act of 2007

The Energy and Independence Security Act of 2007 (42 USC §17001) sets federal energy management requirements in several areas, including energy reduction goals for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use, including by setting automobile efficiency standards, and increase in alternative fuel use. This act also amends portions of the National Energy Policy Conservation Act, described above.

Corporate Average Fuel Economy Standards

Section 3.8, *Greenhouse Gas Emissions*, details federally-established fuel economy standards by the U.S. Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration (NHTSA). NHTSA's Corporate Average Fuel Economy (CAFE) standards regulate how far vehicles must travel on a gallon of fuel. NHTSA sets CAFE standards for

passenger cars and for light trucks (collectively, "light-duty vehicles"), and separately sets fuel consumption standards for medium- and heavy-duty trucks and engines. In the course of more than 30 years, this regulatory program has resulted in improved fuel economy throughout the United States' vehicle fleet (NHTSA 2014, 2019).

State

Warren-Alquist Act

The 1975 Warren-Alquist Act (Pub. Res. Code §25000 et seq.) established the California Energy Resources Conservation and Development Commission, now known as the CEC. The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The Act also was the driving force behind the creation of Appendix F to the CEQA Guidelines.

State of California Integrated Energy Policy

Public Resources Code Section 25301(a) requires the CEC to develop an integrated energy plan at least every 2 years for electricity, natural gas, and transportation fuels. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. An overarching goal of the resulting Integrated Energy Policy Report (IEPR) is to achieve the statewide greenhouse gas (GHG) emission reduction targets, while improving overall energy efficiency. See, for example, the CEC's 2019 Integrated Energy Policy Report, which includes integration of increasing amounts of renewable energy resources, including solar, as a key component, as well as pairing energy storage with generation projects (CEC 2020a).

Renewables Portfolio Standard

The State of California adopted standards to increase the percentage that retail sellers of electricity, including investor-owned utilities and community choice aggregators, must provide from renewable resources. The standards are referred to as the RPS. Qualifying renewables under the RPS include bioenergy such as biogas and biomass, small hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy (CPUC 2021a).

Executive Orders S-14-08 and S-21-09

In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expanded the State's RPS to 33 percent renewable power by 2020. In September 2009, Governor Schwarzenegger continued California's commitment to the RPS by signing Executive Order S-21-09, which directed the California Air Resources Board (CARB) under its Assembly Bill (AB) 32 authority to enact regulations to help the State meet its RPS goal of 33 percent renewable energy by 2020.

Senate Bill 350 – Clean Energy and Pollution Reduction Act of 2015

Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015, was enacted on October 7, 2015. It provides a new set of objectives in clean energy, clean air, and pollution reduction by 2030. The objectives include the following:

1. To increase from 33 percent to 50 percent by December 31, 2030, the procurement of electricity from renewable sources.
2. To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 100 and Executive Order B-55-18

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also created new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned and publicly-owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers also are required to have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

On the same day that SB 100 was signed, Governor Brown signed Executive Order B-55-18 with a new statewide goal to achieve carbon neutrality (zero-net GHG emissions) by 2045 and to maintain net negative emissions thereafter.

Energy Storage

The CPUC set an energy storage procurement framework with a 1,325 MW storage target by 2020 for investor-owned utilities as required by AB 2514 (2010). This decision also set the energy storage procurement target for each electric service provider and community choice aggregator at 1 percent of its 2020 annual peak load. The three major investor-owned utilities in the state, including PG&E, have exceeded the AB 2514 target of 1,325 MW and satisfied nearly all domain-specific requirements. AB 2868 (2016) requires California's three major investor-owned utilities to propose programs and investments for up to an aggregate 500 MW (166.6 MW each) of distributed energy storage systems, above and beyond the 1,325 MW target for energy storage generally (CPUC 2021b).

Energy-efficient Building Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings specified in Title 24, Part 6 of the California Code of Regulations include requirements for non-residential building lighting, insulation, ventilation, and mechanical systems. Its provisions would be relevant to the Project's proposed operations and maintenance (O&M) building.

The California Green Building Standards Code (CALGreen, Title 24 Part 11) is a statewide regulatory code for all buildings. CALGreen is intended to encourage more sustainable and

environmentally friendly building practices, require use of low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment.

Local

County of Fresno Solar Facility Guidelines

The Fresno County Board of Supervisors modified the Fresno County Solar Facility Guidelines regarding commercial solar projects and processing within unincorporated areas of Fresno County on December 12, 2017 (Fresno County 2017). The Guidelines identify general guidelines and policies related to the land use process for evaluating solar facilities that accommodate new renewable energy technology while balancing the need to protect important farmlands and minimize impacts to existing agricultural operations.

4.7.2 Significance Criteria

The Project would result in significant impacts to energy if it would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.7.3 Direct and Indirect Effects

4.7.3.1 Methodology

Consistent with Public Resources Code Section 21100(b)(3), this impact analysis evaluates the potential for the Project to result in a substantial increase in energy demand and/or wasteful use of energy during Project construction, operation and maintenance, and decommissioning. The impact analysis is informed by Appendix F of the CEQA Guidelines. The potential impacts are analyzed based on an evaluation of whether construction and operational energy use estimates for the Project would be considered excessive, wasteful, or inefficient taking into account that the Project would provide a new source of renewable energy. Energy emissions details supporting the Project estimates presented in this section also are presented in Section 4.9, *Greenhouse Gas Emissions*.

4.7.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact for criterion a) and no impact regarding criterion b). The impact conclusions for that subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Impact 4.7-1: Project construction, operation and maintenance, and decommissioning and site reclamation would not result in the wasteful, inefficient, or unnecessary consumption or use of energy. (*Less than Significant Impact*)

The analysis in this section utilizes the assumptions identified in Appendix E-1, *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Sonrisa Solar Project*; and Appendix E-2, *Construction Water Truck Emissions*. Because the California Emissions Estimator Model (CalEEMod) program used in this technical report does not display the amount and fuel type for construction-related sources, additional calculations were conducted and are summarized below and provided in Appendix E-3, *Sonrisa Solar Project Fuel Use Calculations*. If onsite water is used for construction and operational needs, then the energy calculations in Appendix E would be a conservative estimation, as offsite water delivery would not be needed (and a reduction in water truck fuel usage would occur).

The Project would use no natural gas for construction, operation (including the power generation process) and maintenance, or decommissioning. Therefore, the Project would have no impact on natural gas supplies. Below are discussions of the fuel and electricity usage that would be associated with the Project.

Construction

Construction of the Project would result in fuel consumption from the use of construction tools and equipment, vendor truck trips, and vehicle trips generated from construction workers traveling to and from the site. The Project's energy and fuel consumption during construction is summarized in **Table 4.7-4**. Project construction is expected to consume a total of approximately 367,398 gallons of diesel fuel from construction equipment and truck trips, and approximately 148,575 gallons of gasoline from construction worker vehicle trips. Project fuel use during construction would represent approximately 0.27 percent of diesel and 0.04 percent of gasoline sold in Fresno County in 2020 (CEC 2020b).

TABLE 4.7-4
PROJECT ENERGY CONSUMPTION DURING CONSTRUCTION

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Diesel (construction equipment and trucks)	367,398	gallons	50,473
Gasoline (worker vehicles)	148,575	gallons	17,872
Electricity (security lighting)	3,267	kWh	11
Electricity (water-related)	342,144	kWh	1,167
Total	**-**	**-**	**69,523**

NOTES:

MMBtu = million British thermal unit
kWh = kilowatt-hours

a Based on U.S. Energy Information Administration (EIA) conversion factors.

SOURCE: Data compiled by Environmental Science Associates in 2021 (Appendix E-3); EIA 2021b.

Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a typical condition of the Project. In addition, there are no unusual Project characteristics that would cause the use of construction equipment that would be less energy efficient compared with other similar solar project construction sites in other parts of the County.[2] Therefore, construction-related fuel consumption by the Project would not result in inefficient, wasteful, or unnecessary energy use compared with construction of other solar project sites in the region.

Electricity would be required during construction for security lighting and related to water use. Power would be provided during construction via temporary overhead pole connections. Electricity during construction was estimated using the CalEEMod demand factors for a parking lot type use to estimate the electricity associated with security lighting, approximately 3,267 kWh. Water use during construction would amount to a total of up to 300 acre-feet. Electricity associated with the supply, distribution, and treatment of water used for construction would be approximately 342,144 kWh for a total of 345,411 kWh of electricity over the up to 15-month construction period.[3] This electricity consumption would be approximately 0.02 percent of the electricity consumption for the mining and construction sector in PG&E's service area in 2019 (CEC 2021c). Construction activities and corresponding electricity use from the PG&E grid would be temporary. In addition, there are no unusual Project characteristics that would cause the use of electricity to be energy-inefficient. As shown in Table 4.7-4, the total energy consumption during the construction period would be approximately 69,523 MMBtu, which is approximately 0.0009 percent of statewide energy use as of 2019. Therefore, the electricity use during Project construction would not be substantial in comparison to existing energy use, and would not constitute a wasteful, inefficient, or unnecessary use of energy. This impact would be less than significant.

Operation and Maintenance

The Project's anticipated annual electricity and fuel consumption during operation is summarized in **Table 4.7-5**. Electricity would be required during operation and maintenance, for example, for lighting and to power HVAC equipment). During O&M, electricity to serve the Project would be provided via a distribution-level connection to the on-site station service transformer with connection lines installed above- and/or below ground. For operational activities, annual electricity consumption was calculated using demand factors for a warehouse type building, an office type building, and a parking lot (for outdoor lighting), as CalEEMod does not provide demand factors specifically for solar facilities. The Project's electricity consumption was estimated to be approximately 58,233 kWh of electricity per year. Additionally, the average water use during the Project's O&M phase is estimated to be approximately 2 af per year for PV solar panel washing and general maintenance. Electricity associated with the supply, distribution, and treatment of water used for operation and maintenance would be approximately 2,281 kWh per

[2] Since energy consumption is directly proportional to GHG emissions generation, the Project's construction-related GHG emissions were compared to the Fifth Standard Solar Project Complex (Fresno County 2020), the Little Bear Solar Project (Fresno County 2018), and the Tranquillity Solar Project in Fresno County (Fresno County 2014).

[3] Based on the CalEEMod energy intensity of 0.0035 kWh per gallon for supply, distribution, and treatment of water for Fresno County.

TABLE 4.7-5
PROJECT ANNUAL ENERGY CONSUMPTION DURING OPERATION

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Electricity			
O&M building	58,233	kWh/year	199
Water-related	2,281	kWh/year	7.8
Gasoline			
O&M employee vehicles	25,038	gallons/year	3,019
Total	**-**	**-**	**3,226**

NOTES:
MMBtu = million British thermal unit
kWh = kilowatt-hours
a Based on U.S. EIA conversion factors.
SOURCE: Data compiled by Environmental Science Associates in 2021 (Appendix E-3); EIA 2021b.

year.[4] Using the installed tracker capacity of 200 MW alternating current (AC), the solar facility is anticipated to generate approximately 392,541,280 kWh per year (Appendix E-1). Thus, the minimal amount of electricity required during Project operation would be greatly offset by the generation of renewable electricity from the Project, and the Project's electricity demand would not constitute a wasteful, inefficient, or unnecessary use of energy.

Operation and maintenance would require the use of light duty trucks and other light equipment for maintenance and module washing. Large or heavy equipment may be brought to the facility infrequently and only for equipment repair, replacement, or vegetation control, and the associated diesel fuel consumption would be minimal. Thus, as discussed in Section 4.7.1, although irreversible commitments of small quantities of nonrenewable resources would occur during operation of the Project, the amount of diesel fuel consumed during Project operation would be relatively minimal and would not constitute a wasteful, inefficient, or unnecessary use of energy.

Gasoline would be required for Project workers commuting to and from the Project site. Using the total CalEEMod mobile emissions rates (Appendix E-1) during operations yield a conservative estimate of 25,038 gallons of gasoline required annually during Project operation. Project fuel use during operation and maintenance would represent approximately 0.007 percent of gasoline sold in Fresno County in 2020 (CEC 2020b). This gasoline use during Project operation would not constitute a wasteful, inefficient, or unnecessary use of energy.

Additionally, as shown in Table 4.7-5, the Project's total annual energy consumption would be approximately 3,226 MMBtu. The Project also would be anticipated to generate up to approximately 392,541,280 kWh per year, or 1,339,351 MMBtu, which represents approximately 0.02 percent of statewide energy use in 2019. Additionally, the proposed energy storage system would extend the period of time each day that the Project could contribute PV-generated energy to the electrical grid and sustain its own operation-related consumption. Therefore, the energy use

[4] Based on the CalEEMod energy intensity of 0.0035 kWh per gallon for supply, distribution, and treatment of water for Fresno County.

during Project operation would not constitute a wasteful, inefficient, or unnecessary use of energy. This impact would be less than significant.

Decommissioning

Within the roughly 12-month timeframe immediately preceding expiration of the requested 35-year use permit for the Project, the site would be decommissioned, reclaimed, and restored in accordance with a County-approved Reclamation Plan, a draft of which is provided in Appendix B-1 Because of the difficulties in predicting improvements to equipment efficiencies and emissions rates 35 years into the future, the *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Sonrisa Solar Project* (Appendix E-1) conservatively assumed that decommissioning would use the same fleet of equipment as modeled for construction, but for a shorter (6-month) duration.

Decommissioning of the Project would result in fuel consumption from the use of tools and equipment, truck trips to remove materials from the site, and vehicle trips generated from workers traveling to and from the site. The Project's energy and fuel consumption during decommissioning is summarized in **Table 4.7-6**. Project decommissioning is expected to consume a total of approximately 148,513 gallons of diesel fuel from equipment use and truck trips, and approximately 45,439 gallons of gasoline from worker vehicle trips. Project fuel use during decommissioning would represent approximately 0.11 percent of diesel and 0.01 percent of gasoline sold in Fresno County in 2020 (CEC 2020b).

TABLE 4.7-6
PROJECT ENERGY CONSUMPTION DURING DECOMMISSIONING

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Diesel (construction equipment and trucks)	148,513	gallons	20,403
Gasoline (worker vehicles)	45,439	gallons	5,466
Electricity (security lighting)	3,267	kWh	11
Electricity (water-related)	342,144	kWh	1,167
Total	**-**	**-**	**27,047**

NOTES:

MMBtu = million British thermal unit
kWh = kilowatt-hours

a Based on U.S. Energy Information Administration (EIA) conversion factors.

SOURCE: Data compiled by Environmental Science Associates in 2021 (Appendix E-3); EIA 2021b.

It is assumed that electricity would be required during decommissioning for purposes similar to those required for construction such as security lighting, and that a similar amount of water would be required. Thus, electricity use during decommissioning was assumed to be 345,411 kWh. This energy consumption would be approximately 0.02 percent of the electricity consumption for the mining and construction sector in PG&E's service area in 2019 (CEC 2021c).

Decommissioning activities and corresponding fuel and electricity consumption would be temporary and would be less than the construction-related fuel and electricity demand; decommissioning-related fuel use also would not represent a substantial demand on energy

resources. Thus, decommissioning-related fuel consumption by the Project would not result in inefficient, wasteful, or unnecessary energy use compared with other solar project construction sites in the County.[5] Additionally, as shown in Table 4.7-4, the total energy consumption during the decommissioning period would be approximately 27,047 MMBtu, which is approximately 0.0004 percent of statewide energy use as of 2019. This energy use during Project decommissioning would not constitute a wasteful, inefficient, or unnecessary use of energy. This impact would be less than significant.

Mitigation: None required.

Criterion b) Whether the Project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The Project involves the construction, operation and maintenance, and decommissioning of a solar and battery storage facility that would produce a new renewable source of energy in Fresno County. Although the Project would provide a new source of renewable energy, the specific existing sources of energy that could be replaced by this Project are unknown. The Project would supply solar energy to PG&E's electrical grid, and would be available to reduce the potential demand of nonrenewable generated power.

Solar energy fluctuates and power from solar facilities is produced at different rates during certain periods of the day and year. Increasing energy storage is a key strategy for ensuring a reliable grid (CAISO 2016). The Project's proposed energy storage system would allow energy to be reliably fed to the grid from an otherwise intermittent energy production source, and would help maintain grid reliability. The proposed energy storage system also would assist California utilities in meeting their obligations under State energy storage targets and the CPUC's energy storage program. Therefore, the Project would directly support SB 100 and California's RPS goal of increasing the percentage of electricity procured from renewable sources to 100 percent by 2045.

As described in Impact 4.7-1, the Project would require diesel and gasoline fuel, as well as minimal amounts of electricity through the life of the Project. However, these energy inputs would be offset by the anticipated Project generation of approximately 392,541,280 kWh per year.

In terms of mobile energy usage, as described above, the National Highway Traffic Safety Administration (NHTSA) required manufacturers of light duty vehicles to meet an estimated combined passenger car and light truck average fuel economy level of 34.1 miles per gallon (mpg) by model year 2016. In the course of more than 30 years, the NECPA regulatory program has resulted in improved fuel economy throughout the United States' vehicle fleet, and has also protected against inefficient, wasteful, and unnecessary use of energy. The projected fleet-wide mpg for light duty vehicles is expected to reach 41.7 mpg by 2020 (USEPA 2012). Vehicles used by Project construction, maintenance, and decommissioning workers to travel to and from the

[5] See Footnote 2 for the list of projects considered.

Project site would be manufactured to incorporate these standards; therefore, the Project would not impede the efficient use of transportation fuel.

The O&M building on the Project site would be subject to the Building Energy Efficiency Standards required by regulations (24 Cal. Code Regs. Part 6) that implement the California Energy Code. These standards are intended to save energy, increase electricity supply reliability, and avoid the need to construct new fossil-fueled power plants. Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the Project's energy conservation measures when the Project's building plans are submitted. These measures could include: insulation, use of energy-efficient heating, solar-reflective roofing materials, energy-efficient indoor and outdoor lighting systems, and other measures. The Project also would be subject to CALGreen during construction and decommissioning activities, which requires 65 percent construction and demolition waste diversion.

Since the Project would provide a new source of renewable energy supporting SB 100 and the State's energy goals, offset its fuel usage, and comply with fuel and energy efficiency regulations, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. There would be no impact. ***(No Impact)***.

4.7.3.3 PG&E Infrastructure

To accommodate the Project, PG&E would extend an existing 230 kV gen-tie line by up to 0.2-mile to connect with the Project's proposed substation. The PG&E transmission line extension would include of 230 kV conductor strung on approximately six new or existing tubular steel poles that would be approximately 140 feet high.

Similar to the Project, the PG&E infrastructure would enable an interconnection that would support SB 100 and California's energy goals to offset the state's use of fossil fuels. The transmission line would transmit electricity from renewable sources and as such would not be a wasteful or inefficient use of resources, nor would this infrastructure conflict with California's energy and climate goals. The PE&E interconnection would result in a negligible use of energy resources, primarily associated with the use of fuels during construction. The environmental effects of the PG&E infrastructure alone and when combined with the impacts of the rest of the Project would result in a less-than-significant impact to energy resources.

4.7.3.4 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Alternative 1 would result in a 20 percent reduction in the size of the Project site and a corresponding reduction of the solar generating and battery storage capacity of the Project. Compared to the Project, the Alternative 1 would result in less surface disturbance and reduced construction and decommissioning activities, which would require fewer fuel resources. However, the capacity of the solar facility would also be reduced, causing a lower production of energy generation. Given the minimal amount of electricity required during Alternative 1, operation would remain offset by the generation of electricity from the Alternative 1 panels.

Overall, Alternative 1 would result in no significant impacts to energy; impact conclusions would be the same as those identified for the Project.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar or battery storage facilities would be constructed, operated, maintained, or decommissioned at the Project site. No construction equipment or additional vehicle trips would be made to, from, or within the site relative to baseline conditions. No renewable energy would be generated, stored, or delivered to the electric grid from the Project site. Instead, the Project site would continue to be used for dry-farmed agriculture and/or left fallow unless and until a different use is proposed. Because there would be no change relative to baseline conditions, the No Project Alternative would result in no impact related to energy. It is noted the No Project Alternative would not assist in meeting California's RPS goal of increasing the percentage of electricity procured from renewable sources to 100 percent by 2045.

4.7.4 Cumulative Analysis

The geographic context for potential cumulative impacts related to electricity is PG&E's service area and for equipment and vehicle fuel use is within the Project's construction equipment delivery and workers' average travel radius (assumed to be up to 154 miles for vendors and approximately 40 miles for workers), since these are the areas within which energy resources would be demanded and supplied for the Project.

The Project would use energy resources during initial demolition and construction, operation and maintenance, and decommissioning; therefore, it could contribute to potential cumulative impacts during any of these phases as well.

Criterion a)

An increasing number of unplanned electrical outages over the past few years has resulted in blackouts and brownouts that have affected thousands of PG&E customers.[6] Severe weather conditions have increased in both frequency and intensity, including hotter than normal heat waves, heavier heavy rain events, and harsher winter storms. These types of severe weather conditions "are among the leading causes of large-scale power outages in the United States" (Climate Central 2014). In light of this trend, the wasteful, inefficient, or unnecessary consumption of energy resources could have dire consequences when the area is experiencing severe weather conditions. However, the Project's incremental construction-related less-than-significant impact would be followed by decades of operation during which the Project would provide an additional source of renewable energy that could serve the cumulative demand. Additionally, the proposed energy storage system would contribute to electrical grid reliability,

[6] For example, while simultaneously experiencing triple digit temperatures, the residents of at least 15,000 Central Valley homes, including more than 7,000 homes in Fresno County, found themselves without power on June 19, 2021, not due to a planned outage (ABC30 2021).

and would also assist California utilities in meeting their obligations under State energy storage targets and the CPUC's energy storage program. Because the Project overall would have a beneficial cumulative impact on electrical resources, it would not result in a cumulatively considerable contribution to any adverse significant impact in this regard.

Regarding the efficiency of fuel use, there is no existing significant adverse condition (such as a shortage) that would be worsened or intensified by the Project. Past, present, and reasonably foreseeable future projects within approximately 40 to 154 miles of the Project site could require gasoline or diesel but would not combine with the fuel demands of the Project to cause a significant adverse cumulative impact relating to the wasteful, inefficient, or unnecessary consumption or use of fuel. In the event of a future shortage, higher prices at the pump would curtail unnecessary trips that could be termed "wasteful" and would moderate choices regarding vehicles, equipment, and fuel efficiency. Under these conditions, the Project's less-than-significant impact relating to wasteful, inefficient, or unnecessary consumption or use of fuel would not cause or contribute to any significant cumulative impact.

Criterion b)

As discussed above, there would be no impact with respect to conflicts with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, neither the Project nor alternatives would cause or contribute to any potential significant cumulative impact in this regard.

4.7.5 References

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4.8 Geology, Soils, and Paleontological Resources

This section identifies and evaluates issues related to Geology, Soils, and Paleontological Resources in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The County did not receive any scoping comments pertaining to geology, soils, or paleontological resources. See Appendix A, *Scoping Report*.

This analysis is based in part on the Geologic Reconnaissance Report prepared by Ninyo & Moore (Appendix G-1), and the Paleontological Resources Review prepared by Dudek (Appendix G-2). The preparers of this Draft EIR independently reviewed these and other materials prepared by or on behalf of the Applicant and determined them to be suitable for reliance on (in combination with other materials included in the formal record) for the preparation of this Draft EIR.

4.8.1 Setting

4.8.1.1 Environmental Setting

Study Area

The study area for the consideration of potential impacts relating to geology, soils, seismicity, and paleontological resources consists of the Project site and adjacent areas because such impacts tend to be site-specific and depend on the local geology and soil conditions.

Regional Geology

The Project site is approximately 9 miles south of the City of Mendota in unincorporated Fresno County in the San Joaquin Valley. The Project site is within the southern portion of the Great Valley Geomorphic Province, which is an alluvial plain approximately 50 miles wide and 400 miles long in central California. The Great Valley is a basin in which there has been almost continuous deposition since the Late Jurassic Period (approximately 160 million years ago), and is filled with sediments eroded from the Sierra Nevada mountain range and the Coast Range.

The topography at the Project site is relatively flat, with the elevation at the Project site varying from approximately 190 feet above mean sea level (AMSL) in the southwest to 160 feet AMSL in the northeast.

Local Geology

Based on the Project's Geologic Reconnaissance Report (Appendix G-1) compiled by Ninyo & Moore and published geologic mapping, the surficial geology at the Project site is comprised of artificial fill, agricultural topsoil, and Quaternary[1]-age alluvial fan and basin deposits

[1] The Quaternary Period is a unit of geologic time that spans from the beginning of the Pleistocene Epoch (2.58 million years ago) to the end of the Holocene Epoch (recent).

(Appendix G-1; Jennings & Strand 1958; Dibblee & Minch 2007). While not mapped at the surface, geologic mapping indicates that older, Pleistocene-age deposits may be present at depth. The fill and topsoil are a result of human activity; the fan and basin deposits are generally considered to be Holocene-age. However, while the upper layers of basin deposits are considered to be Holocene-age, the lowermost layers of this unit are likely Pleistocene-age.

Soils

Expansive Soils

Expansive soils are soils that possess a "shrink-swell" characteristic, also referred to as linear extensibility. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil. Changes in soil moisture can result from rainfall, landscape irrigation, utility leakage, roof drainage, and/or perched groundwater.[2] Expansive soils are typically very fine-grained and have a high to very high percentage of clay. Structural damage may occur incrementally over a long period of time, usually as a result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.

The presence of clayey material in the fill, agricultural soil, and fan deposits indicates that the soils at the Project site are expected to have a moderate potential for expansion (Appendix G-1). Additional data retrieved from the Natural Resources Conservation Service (NRCS) Web Soil Survey echoes the analysis provided in the Geologic Reconnaissance Report (Appendix G-1) indicating moderate to very high expansion potential (NRCS 2020a). Both Appendix G-1 and the Web Soil Survey data indicate the need for further soil testing, as the results from both resources are based on general knowledge about the reported soil types and not based on site-specific testing. Once the final footprint of structures has been established, further soil testing conducted in compliance with standard requirements of the California Building Code would reveal the extent of the soil expansion potential at the Project site and would provide the necessary data to inform soil engineering recommendations.

Corrosive Soils

The corrosivity of soils pertains to the potential for certain soils to cause an electrochemical or chemical reaction that can corrode or weaken uncoated steel or concrete. The rate at which these materials corrode is dependent on multiple variables, including but not limited to soil moisture, texture, mineral content, and acidity. The rate of corrosion of steel is based on soil moisture, particle-size distribution, acidity, and electrical conductivity. Corrosion of concrete is based on the sulfate and sodium content, texture, moisture and acidity of the soil. The risk of corrosion typically is expressed as low, moderate, or high.

Based on previous soil testing done at the site and from soils in the general vicinity of the Project site, the soils at the Project site are considered to have a high corrosion potential (Appendix G-1). Web Soil Survey data also indicates the soils at the Project site have a high corrosion potential.

[2] Perched groundwater is a local saturated zone above the water table that typically exists above an impervious layer (such as clay) of limited extent.

While information provided in Appendix G-1 does not specify whether the corrosion potential is high for steel or concrete or both, the Web Soil Survey data indicate the soils at the Project site have a high potential to corrode both steel and concrete (NRCS 2020b).

Geologic Hazards

Faulting and Seismicity

There are no known Holocene-active[3] faults or pre-Holocene[4] faults within the Project site (CGS 2010). However, multiple fault systems are present in the region, outside of the Project site (Appendix G-1; CGS 2010). The closest known Holocene-active fault is the Great Valley 11 Fault, approximately 8 miles west of the Project site (Appendix G-1). Two other active fault systems in proximity to the Project site are the Ortigalita and San Andreas fault zones, approximately 30 miles northwest and 35 miles southwest of the Project site, respectively (CGS 2010).

Surface Fault Rupture

The Project site is not within an established Earthquake Fault Zone (EFZ) as delineated on an Earthquake Fault Zone Map, required by the Alquist-Priolo Earthquake Fault Zoning Act. The nearest EFZs are the Ortigalita and San Andreas fault zones, both over 30 miles away (CGS 2021).

Seismic Ground Shaking

Ground shaking occurs due to a seismic event and can cause extensive damage to life and property, and may affect areas hundreds of miles away from the earthquake's epicenter. The extent of the damage varies by event and is determined by several factors, including (but not limited to) magnitude and depth of the earthquake, distance from epicenter, duration and intensity of the shaking, underlying soil and rock types, and integrity of structures.

There is moderate potential for strong ground shaking at the Project site due to the presence of nearby faults (Appendix G-1). The 2014 Working Group on California Earthquake Probabilities[5] (WGCEP) concluded that there is a 95 percent probability that a magnitude (M_W) 6.7 earthquake or higher could occur in Northern California before the year 2045, with the San Andreas fault zone as a likely source (Field et al. 2015).

According to the ShakeMap that corresponds with the earthquake planning scenario generated by the United States Geological Survey (USGS), if a M_W 6.6 event were to occur on the Great Valley 11 fault, the Project site may experience strong to very strong ground shaking with moderate to heavy damage expected (USGS 2013a). Additionally, a similar scenario for a M_W 7.1 earthquake in the Ortigalita fault zone indicates strong to moderately severe ground shaking in the event of an earthquake in this fault zone (USGS 2013b).

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3 Holocene-active faults show evidence of displacement within the Holocene Epoch, or the last 11,700 years are considered active (CGS 2008).

4 Pre-Holocene faults have not shown evidence of displacement in the last 11,700 years (CGS 2008).

5 Also referred to as WGCEP 2014, this is a working group comprised of seismologists from the U.S. Geological Survey (USGS), California Geological Survey (CGS), Southern California Earthquake Center (SCEC), and California Earthquake Authority (CEA).

Liquefaction

Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable due to the effects of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslide that occurs when unconsolidated liquefiable material breaks and spreads due to the effects of gravity, usually down gentle slopes. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

The potential damaging effects of liquefaction include differential settlement, loss of ground support for foundations, ground cracking, heaving and cracking of structure slabs due to sand boiling, and buckling of deep foundations due to ground settlement. Dynamic settlement (i.e., pronounced consolidation and settlement from seismic shaking) may also occur in loose, dry sands above the water table, resulting in settlement of and possible damage to overlying structures. In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Lateral spreading can move blocks of soil, placing strain on buried pipelines that can lead to leaks or pipe failure.

The depth to groundwater at the Project site has been measured at depths of 40 to 236 feet below ground surface (bgs), based on irrigation well data provided by the California Department of Water Resources (DWR) Water Data Library (Appendix G-1). Additionally, geologic mapping indicates the presence of loose, unconsolidated alluvial deposits (i.e., basin and fan-derived alluvial deposits) (Appendix G-1). The combination of relatively shallow groundwater and loose, unconsolidated sediments indicates that there is a potential for liquefaction of soils at the Project site to occur in the event of an earthquake (Appendix G-1).

Landslides

Landslides are one of the various types of downslope movements in which rock, soil, and other debris are displaced due to the effects of gravity. The potential for material to detach and move down slope depends on multiple factors including the type of material, water content, and steepness of terrain.

Landslides and other slope failures are not anticipated at the Project site due to the relatively flat surrounding area. Previous landslides have not been observed on or around the Project site (Appendix G-1). Additionally, based on a review of geologic maps of the area, there are no mapped historical landslides in the vicinity of the Project site (Jennings & Strand 1958; Dibblee & Minch 2007).

Subsidence

Land subsidence is the gradual settling or sudden sinking of the earth's surface due to subsurface movement of earth materials (USGS 1999), particularly deep alluvial deposits in valley areas (Appendix G-1). Subsidence in alluvial valley areas is typically associated with groundwater or

petroleum withdrawal (Appendix G-1). Regional ground subsidence or settlement is typically caused by compaction of these alluvial deposits, or other saturated deposits in the subsurface (Appendix G-1; USGS 1999). Local subsidence can occur when areas containing compressible soils are subjected to foundation or fill loads.

The San Joaquin Valley has a history of land subsidence due to groundwater pumping and related compaction of sand and clay layers in Valley sediments. The Project site is in an area that has experienced moderate past land subsidence (Sneed et al. 2013). Measurements within the Mendota area indicate that 2.4 to 4.9 meters of land subsidence occurred between 1926 to 1970, and current monitoring indicates approximately 25 millimeters of land subsidence has occurred in the region between 2008 and 2010 (Appendix G-1).

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones, such as mammals, birds, fish, etc.), invertebrates (animals without backbones, such as starfish, clams, coral, etc.), and microscopic plants and animals (microfossils), and can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which plants or animals became fossilized usually were quite different from the present environments in which the geologic formations exist.

Dudek prepared a Paleontological Resources Review Memorandum for the Project, which evaluates the potential for impacts to paleontological resources during construction activities associated with the Project (Appendix G-2). The memorandum provides mitigation recommendations based on a review of published geologic maps and a summary of a records search performed by the Natural History Museum of Los Angeles County (LACM) fossil locality database.

Based on geologic mapping, the surficial geology at the Project site consists of Holocene-age alluvium (Qb and Qf). Older, Pleistocene-age nonmarine deposits are mapped in the region and are present in the subsurface at an unknown depth. The record search from LACM indicates that there are no paleontological resources within the Project site, or within a 1-mile radius buffer. However, based on record search results from LACM, deposits that date to the Pleistocene Epoch are known to produce scientifically significant in Fresno County (Appendix G-2).

In general, Holocene-age deposits have a low potential to contain significant paleontological resources due to the relatively young age (< 11,700 years old) of those deposits (SVP 2010); however, Holocene-age fossils have been discovered in Fresno County (O'Dell et al. 2017; UCMP 2021). Conversely, Pleistocene-age sedimentary deposits are generally considered to have a high potential to contain significant paleontological resources due to their age and because there have been numerous similar finds in Fresno County (Hewes 1946; Dundas et al. 1996; Trayler 2012), and throughout California (SVP 2010; Sub Terra Consulting 2017).

The University of California Museum of Paleontology (UCMP) fossil locality online database indicates that 10 Holocene vertebrate fossils have been discovered in Holocene-age sediments and 163 Pleistocene fossils have been discovered in Pleistocene-age sediments in Fresno County (UCMP 2021). The nearest fossil locality is approximately 6 miles to the northeast of the Project site, in the town of Tranquillity (Hewes 1946; UCMP 2021). Another notable fossil site is the AERA Oil Seep site, approximately 20 miles southeast of the Project site in Coalinga, CA (O'Dell et al. 2017; UCMP 2021).

While no records of paleontological resources were identified within the Project site, the presence of nearby Holocene and Pleistocene-age fossil discoveries indicates the potential to encounter paleontological resources is high.

4.8.1.2 Regulatory Setting

Federal

No federal statutes, regulations, rules, plans, or standards govern geology, soils, or paleontological resources on the Project site.

State

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, establishes minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. The California Building Standards Commission administers Title 24, and, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, repair, location, maintenance, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California, and would apply to structures proposed on the Project site.

Relevant to the Project, Chapter 18 of the CBC covers the requirements of geotechnical investigations, including expansive soils (§1803); excavation, grading, and fills (§1804); load-bearing of soils (§1806); as well as foundations (§1808), shallow foundations (§1809), and deep foundations (§1810). Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

The Geologic Reconnaissance Report (Appendix G-1) does not reflect Project site-specific geotechnical data collection (such as subsurface evaluation and laboratory testing) and does not include Project-specific geotechnical design recommendations. The design-level geotechnical report (required for final permitting) would include the results and recommendations of the preliminary geotechnical report to inform the final Project design, conditions of approval, or other agency requirements.

National Pollutant Discharge Elimination System (NPDES) Construction General Permit

If Project construction would disturb 1 acre or more of land surface and would affect the quality of stormwater discharges into waters of the U.S., then it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates construction-related discharges of pollutants in stormwater to waters of the U.S. from sites that disturb 1 acre or more of land surface, or that are part of a common plan of development or sale that disturbs more than 1 acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines. See Section 4.11, *Hydrology and Water Quality*, for additional details.

California Public Utilities Commission General Order 95

CPUC General Order 95 provides a framework for rules governing design, construction, and maintenance of overhead electric lines and communication facilities located outside of buildings. The purpose of the requirements in General Order 95 is to ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation, or use of overhead lines and to the public in general (CPUC, 2020). The Project would include such facilities; therefore, this rule is applicable to the Project.

Local

Fresno County 2000 General Plan

The Health and Safety Element of the Fresno County General Plan (Fresno County, 2000) outlines Fresno County's planning strategies regarding emergency management and response, fire hazards, flood hazards, seismic and geological hazards, airport hazards, hazardous materials, and noise. The following policies of the Health and Safety Element are relevant to seismic and geological hazards.

> ***Policy HS-D.3:*** 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:*** 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: 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.8: 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.9: 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.

Fresno County Solar Guidelines

Fresno County has prepared Solar Facility Guidelines (Fresno County 2017) that contain the following requirement relevant to geology and soils:

4. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.

See Appendix I-2 for information about the Project's consistency with Fresno County's Solar Facility Guidelines.

4.8.2 Significance Criteria

The Project would result in significant impacts to geology, soils, and paleontological resources if it would:

a) 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? Refer to Division of Mines and Geology Special Publication 42,

   ii. Strong seismic ground shaking,

   iii. Seismic-related ground failure, including liquefaction,

iv. Landslides.

b) Result in substantial soil erosion or the loss of topsoil;

c) Be located on a geologic unit 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;

d) Be located on expansive or corrosive soil, as defined in California Building Code (2019) Section 1803.5.3, creating substantial direct or indirect risks to life or property;

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 wastewater;

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.8.3 Direct and Indirect Effects

4.8.3.1 Methodology

The following impact analysis is based on the Project characteristics, Project-specific and site-specific technical reports, agency database information and other publicly available information about on-site conditions, including geologic mapping. The analysis also considers the current regulatory requirements that would apply to the Project.

4.8.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with mitigation incorporated with respect to criterion f) and a less-than-significant impact without mitigation for criterion a.ii), a.iii), b), c), d), and e). It also would result in no impact with respect to criterion a.i) and a.iv). The impact conclusions and mitigation requirements for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a.i) Whether the Project would 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.

The Project site is not within a mapped Earthquake Fault Zone (EFZ) according to the available data. Although the area could be affected by earthquakes and seismic ground shaking, there are no current data available indicating the presence of Holocene-active faults within the Project site. The nearest earthquake fault zones to the Project site are the Ortigalita and San Andreas fault zones, which are 17.3 miles south and 35.5 miles southwest of the Project site, respectively. Even characterizing the proposed Operation and Maintenance (O&M) building as a habitable structure, the Project would not directly or indirectly cause potential substantial adverse effects associated with rupture of a known earthquake fault due to the absence of an EFZ. There would be no

impact related to surface fault rupture during Project construction, operation and maintenance, or decommissioning. **(*No Impact*)**

Criterion a.ii) Whether the Project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

Impact 4.8-1: The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. (*Less than Significant Impact*)

Due to the proximity to the Great Valley 11 Fault and the Ortigalita and San Andreas fault zones, the Project site potentially is subject to strong seismic ground shaking. Should strong seismic ground shaking occur at the Project site, damage to the PV modules, the O&M building, or other ancillary facilities could cause potential injury of on-site staff.

The Project would be subject to the seismic design criteria of the CBC, which requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. As explained in Section 4.8.1.2, *Regulatory Setting*, the CBC requires that a licensed geotechnical engineer be retained to design the Project components to withstand probable seismically-induced ground shaking and consolidate recommendations into a site-specific geotechnical report. All construction would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would comply with the seismic recommendations of a California-registered, professional geotechnical engineer contained in the geotechnical report in accordance with the CBC. The final structural design would be subject to approval and follow-up inspection by the Fresno County Building and Safety Team. Final design requirements would be provided to the on-site construction supervisor and the Fresno County Building Inspector to ensure compliance. Adherence to the applicable CBC requirements and local agency enforcement would ensure that the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts related to ground shaking during Project construction, operation and maintenance, or decommissioning would be less than significant.

Mitigation: None required.

Criterion a.iii) Whether the Project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

Impact 4.8-2: The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. (*Less than Significant Impact*)

The Project site is subject to strong seismic ground shaking in the event of an earthquake in the area, due to the presence of nearby faults. The combination of relatively shallow groundwater and

loose, unconsolidated sediments at the Project site indicates potential susceptibility to seismically-induced liquefaction of the soils.

As noted in Impact 4.8-1, above, the Project owner is required to design proposed improvements in accordance with applicable CBC seismic design standards, as adopted by Fresno County, and as recommended by a California-registered professional geotechnical engineer in the site-specific geotechnical report. Consistent with the CBC, the Project owner would prepare the site-specific geotechnical report and incorporate any recommended measures into the Project design. Implementation of these measures in accordance with building code requirements would effectively reduce the hazard to minimize any potential for substantive adverse effects.

Compliance with CBC requirements, including implementation of recommendations provided in the site-specific geotechnical report, and local agency enforcement would reduce or avoid impacts related to ground failure, including liquefaction. Project construction, operation and maintenance, and decommissioning would not directly or indirectly result in adverse effects related to ground failure, including liquefaction, and the impact would be less than significant.

Mitigation: None required.

Criterion a.iv) Whether the Project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

The Project site has nearly flat topography and a very gentle long slope. There are no mapped landslides on or around the site. For these reasons, the potential for landslide hazards at the site is very low, and there would be no impact to landslides from Project construction, operation and maintenance, or decommissioning. **(*No Impact*)**

Criterion b) Whether the Project would result in substantial soil erosion or loss of topsoil.

Impact 4.8-3: The Project would not result in substantial soil erosion or loss of topsoil. (*Less than Significant Impact*)

Project construction would include ground-disturbing activities that could increase the risk of erosion or sediment transport, such as soil excavation, grading, trenching, and soil stockpiling. Because the overall footprint of construction activities would exceed 1 acre, the Project would be required to comply with the Construction General Permit if the Project would result in discharges to waters of the United States, described above in Section 4.8.1.2, *Regulatory Setting*, and discussed further in Section 4.11, *Hydrology and Water Quality*.

The Project would implement best management practices (BMPs) to limit runoff and control erosion during construction, as required, and in compliance with the terms stipulated by the stormwater pollution prevention plan (SWPPP) and associated conditions of the Construction General Permit or, in the absence of a nexus with waters of the United States, a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and

sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation. See Section 2.8, *Erosion Control and Water Quality*, which describes this Applicant-proposed commitment. Compliance with these requirements would reduce the Project's potential impacts associated with soil erosion and loss of topsoil during construction to less than significant.

As discussed in Chapter 2, *Project Description*, the Project has been designed such that site drainage would follow pre-Project drainage patterns. As discussed in greater detail in Section 4.11, *Hydrology and Water Quality*, because the Project site is rural and not located within an area subject to requirements of a municipal separate storm sewer system permit, post-construction standards in the Construction General Permit would apply. Pursuant to the post-construction standards, the Project owner must ensure that post-Project time of runoff concentration is equal or greater than pre-Project time of concentration. Maintaining pre-Project drainage patterns and compliance with the Construction General Permit or comparable Fresno County requirements would reduce the potential for runoff and erosion of topsoil from the Project site or adjacent areas during operation and maintenance of the Project.

The amount of soil disturbance during decommissioning would be similar to that created during Project construction, and similarly could increase the risk of erosion or sediment transport. Without appropriate stormwater control measures, the potential impact could be significant. However, as noted above, the Project owner would either obtain coverage under the Construction General Permit, and prepare and implement a SWPPP with BMPs, similar to the SWPPP that would be implemented during construction, or, in the absence of a nexus with waters of the United States, a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation, consistent with Fresno County requirements. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation. The implementation of BMPs during decommissioning would reduce the impacts of soil erosion during decommissioning to a less-than-significant level.

Mitigation: None required.

Criterion c) Whether the Project would be located on a geologic unit 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.

Impact 4.8-4: The Project would not be located on a geologic unit 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. (*Less than Significant Impact*)

As previously discussed, there would be a less than significant impact related to liquefaction or other seismic-related ground failure, and there would be no impact related to landslides. The area is relatively flat with no evidence of landslides. The Project site is in an area that has experienced moderate land subsidence in the past, and the San Joaquin Valley has a history of land subsidence due to groundwater pumping.

The Project would require the use of 300 acre-feet (AF) of water during the up to 14-month construction period. The operation and maintenance of the Project could require up to an additional 2 acre-feet per year (AFY). The groundwater may be provided by a well, the location of which has yet to be determined but for analysis purposes assumed to be in the center of the Project site (see Figure 2-2 and Appendix C-2). It is known that the groundwater would come from the Westside Subbasin of the San Joaquin Valley Groundwater Basin. In the event that water is sourced from an onsite well, local minor areas of subsidence is unlikely to occur as the Project is not located within a subsidence prone area. Water would be required during construction for dust suppression, and would be provided by the Westlands Water District (WWD) or another local source. Operation and maintenance would require water for panel washing, which either would be sourced from onsite well water or transported to the Project site in water trucks. Similar to the construction phase, the decommissioning and reclamation phases would require water for dust suppression. Additionally, no dewatering activities are planned as part of the Project.

As discussed in Impact 4.11-2 (see Section 4.11, *Hydrology and Water Quality*), the Water Supply Assessment (WSA) (Appendix C) for the Project concluded that, while the Westside Subbasin is in a state of critical overdraft, the Project water demands would not adversely impact the water supply. The WSA also considers the sustainability goals presented in the Groundwater Sustainability Plan (GSP) for Westside Subbasin, which include actions to prevent further subsidence due to groundwater withdrawal. Water demands for the Project would be consistent with the groundwater sustainability goals of the GSP.

Furthermore, the Project would be designed in accordance with all applicable building codes to reduce the impacts associated with unstable soils at the Project site, including incorporating design recommendations to accommodate for vertical movement associated with long-term ground subsidence. If unstable soils are identified by the site-specific geotechnical report, design recommendations from the geotechnical report would be incorporated into the Project and implemented prior to, or during, construction. Adherence to all applicable building code requirements would avoid and reduce the potential for impacts associated with unstable soils; potential impacts would be less than significant.

Mitigation: None required.

Criterion d) Whether the project would be located on expansive or corrosive soil, as defined in California Building Code (2019) Section 1803.5.3, creating substantial direct or indirect risks to life or property.

Impact 4.8-5: The Project could be located on expansive or corrosive soil, creating substantial direct or indirect risks to life or property. (*Less than Significant Impact*)

Expansive Soils

The Geologic Reconnaissance Report (Appendix G-1) and the NRCS Web Soil Survey data indicate the soil underlying the Project site has a moderate to very high expansion potential, and that soil testing is required to further characterize the nature of the soils underlying the Project site. The potential impacts to life or property associated with expansive soils could be significant if not addressed appropriately. As discussed in Section 4.8.1.2, *Regulatory Setting,* and in Impact 4.8-1, the Project owner must prepare a design-level, site-specific geotechnical report for final permitting that would incorporate soil data collected from the Project site. Project design recommendations based on the data collection would be provided in the geotechnical report. Project design and construction activities would be required to comply with CBC requirements (including expansive soils (CBC §1803)) and would employ standard engineering and building practices common to construction projects throughout California (e.g., soil removal and replacement with engineered soil or treatment of expansive soils) that are also consistent with building code requirements.[6]

The required design-level geotechnical investigation described above would identify any expansive soils within the Project site and specific responsive requirements to ensure that all foundations and other below-ground infrastructure would not be adversely affected by expansive soils. Adherence to design requirements consistent with the most updated version of the CBC and soil engineering recommendations provided in a site-specific geotechnical report would avoid or reduce impacts related to expansive soils to less than significant.

Corrosive Soils

Both the Geologic Reconnaissance Report and Web Soil Survey data indicate that the soils underlying the Project site have a high potential to corrode steel and concrete. Because Project components include steel support structures and concrete foundations, these structures could be in contact with potentially corrosive soils. The impacts to life or property associated with corrosive soils, if not addressed appropriately, could be significant due to the soils corroding and/or weakening the concrete and/or steel followed by subsequent failure of the affected infrastructure. The CBC-required design-level geotechnical report would identify site-specific design recommendations such as protective coatings, concrete additives, and corrosion monitoring systems, if necessary, to reduce effects related to corrosive soils. Adherence to design requirements consistent with the most up to date version of the CBC and the recommendations in the site-specific geotechnical report would ensure a less-than-significant impact related to corrosive soils.

6 The 2019 edition of the CBC is based on the 2018 International Building Code (IBC) published by the International Code Council, which replaced the Uniform Building Code (UBC).

Mitigation: None required.

Criterion e) Whether the Project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater.

Impact 4.8-6: The Project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater. (*Less than Significant Impact*)

As described in Appendix G-1, soils on the Project site are anticipated to be capable of supporting an adequately-designed septic tank or alternative wastewater disposal system. The sanitary waste discharged from the O&M building would be captured by a 1,500-gallon septic system and leach field, which would be installed adjacent to the O&M building.

A septic system permit would be required by the Fresno County Public Works and Planning Department, which is the regulatory agency that oversees the design, installation, and operation of on-site wastewater treatment systems. Adherence to requirements of the County septic system permit would ensure the on-site septic system would be installed properly and within adequate soils, and the Project would not introduce an environmental or public health hazard by building septic tanks or other wastewater disposal systems in soils that are incapable of adequately supporting such systems. There would be a less than significant impact related to inadequate soils supporting an on-site septic system.

Mitigation: None required.

Criterion f) Whether the Project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact 4.8-7: The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (*Less than Significant Impact with Mitigation Incorporated*)

Geologic mapping indicates that the surficial deposits at the Project site consist of Holocene-age (basin and fan-derived) alluvial sediments, with older, Pleistocene-age sediments mapped in the vicinity and likely present at an unknown depth beneath the Project site. Generally, surficial Holocene-age sediments have a low potential to contain significant paleontological resources, although there have been several significant fossils discovered within Holocene-age sediments in Fresno County. Pleistocene-age sediments are considered to have a high potential to contain significant paleontological resources due to their age and the well-documented presence of significant fossil finds in Fresno County and throughout California. Given the proximity of past fossil discoveries in the area and the presence of sediments with low to high potential to contain paleontological resources, the Project site has the potential to yield unique paleontological resources. The risks of uncovering or destroying paleontological resources increase with the

amount of ground disturbance associated with a project; ground disturbing activities that would not require mass excavation of soil (i.e., post driven into the ground) would have a minimal impact on paleontological resources, as there would be little to no material to observe.

The PV solar modules would require a mounting system that would be supported by steel posts driven 4 to 5 feet into the ground, which would have minimal impact on paleontological resources. The Project also would include the construction of a substation and an O&M building, both of which would require some excavation, up to a maximum depth of 10 feet. Any deep excavation associated with the Project substation or the O&M building could potentially impact paleontological resources, if they are deep enough. Additionally, telecommunication infrastructure would require below-ground installations, usually 24-48 inches below grade. There would be similar amounts of ground disturbance associated with the decommissioning and reclamation process. Negligible surface disturbance is anticipated during the operation and maintenance phase of the Project.

The Project site has been historically used for agricultural purposes (dry-farmed for grain crops or lain fallow for at least the past 10 years) indicating that the uppermost layers of the subsurface have been previously disturbed and therefore would not be likely to contain significant paleontological resources. Nonetheless, due to the presence of Holocene-age alluvium at the Project site and the potential to encounter Pleistocene-age sediments in the subsurface, it is possible that Project activities could disturb paleontological resources. While the potential to encounter significant paleontological resources is considered low, a potentially significant impact could result if unique paleontological resources are encountered and inadvertently destroyed during ground-disturbing activities.

In the event of an unanticipated fossil discovery during ground-disturbing activities, the severity of the impact would be reduced to a less than significant level by the implementation of **Mitigation Measure 4.8-1: Unanticipated Fossil Discovery**, which would require the development of a Paleontological Worker Education and Awareness Program, and would require that work halt in the vicinity of any potential find until a qualified paleontologist can make an assessment and provide further recommendations.

> **Mitigation Measure 4.8-1: Unanticipated Fossil Discovery**
>
> Prior to ground disturbing activities for Project construction or decommissioning, the Project owner shall retain a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) to develop and implement a Paleontological Worker Education and Awareness Program (WEAP). If paleontological resources are discovered during ground-disturbing activities (e.g., during Project construction or decommissioning), all earthwork or other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified professional paleontologist can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage is required, recommendations will be consistent with the standards of the SVP that are current as of the discovery and with currently-accepted scientific practice. The current standards of the

SVP are set forth in the SVP's 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, as prepared by the SVP's Impact Mitigation Guidelines Revision Committee. If required, treatment for fossil remains may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may also include preparation of a report for publication describing the finds.

Significance after Mitigation: Less than Significant. Adherence to Mitigation Measure 4.8-1 requires that a SVP- qualified professional paleontologist would be retained to prepare and administer a Paleontological WEAP for construction personnel prior to construction. If paleontological resources such as fossils are encountered during ground disturbing construction activities, a qualified paleontologist would be retained to assess the find, inform on additional monitoring procedures, and treat and salvage the find. Implementation of Mitigation Measure 4.8-1 would ensure that potential impacts to significant paleontological resources would be reduced to less than significant levels.

4.8.3.3 PG&E Infrastructure

To accommodate the Project, PG&E would extend an existing 230 kV gen-tie line by up to 0.2 miles to connect with the Project's proposed substation. The PG&E transmission line would include 230 kV conductor strung on approximately six new or existing tubular steel poles that would each be approximately 140 feet high.

The construction activities associated with the PG&E infrastructure would be required to comply with, and adhere to, the same design criteria included in the CBC as the rest of the Project components. The PG&E transmission line also would be required to comply with CPUC General Order 95 Rules for Overhead Electric Line Construction Development of the approximately 3 acre switching station area would be required to comply with requirements of the Construction General Permit, similar to the Project components evaluated above, including implementation of BMPs during construction activities. Any subsurface excavation deeper than previously disturbed soils required for the PG&E infrastructure (e.g., to install the power poles) would be subject to Mitigation Measure 4.8-1: Unanticipated Fossil Discovery. Implementation on Mitigation Measure 4.8-1 would reduce any potential impacts to a less-than-significant level.

In summary, the significance conclusions and mitigation requirements recommended for the Project as a whole would apply equally to the implementation of the PG&E interconnection infrastructure and the combined effects of the Project and PG&E infrastructure would be less-than-significant.

4.8.3.4 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Compared to the Project, Alternative 1 would involve a 20-percent smaller overall area of soil disturbance within the boundary identified as the Project site. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Similar to the Project, Alternative 1 would require coverage under the Construction General Permit, which would require that a SWPPP be developed and implemented to reduce impacts.

Overall, due to the reduced scale proposed under Alternative 1, impacts to geology, soils, and paleontological resources would be reduced. However, as approximately 1,600 acres would be utilized, a comparable set of impacts would occur (as described in Section 4.8.3.2). The same mitigation would be required for Alternative 1 to reduce impacts to paleontological resources, as the same depth of excavation would be required to install the facilities. Other impacts would also be less than significant.

No Project Alternative

If the No Project Alternative were to be implemented no ground disturbance associated with the Project would take place and the site would continue to be dry farmed or left fallow, as under existing conditions. The Project's solar facility and associated structures would not be constructed, nor would the PG&E generation tie line. There would be no impact pertaining to geology, soils, and paleontological resources attributable to the Project. A No Project Alternative would not meet the objectives of the Project, nor would such an alternative preclude future use of the site as a solar facility under a separate CUP application.

4.8.4 Cumulative Analysis

As discussed above, neither the Project nor alternatives would cause any impact with respect to surface fault rupture or landslides. Therefore, neither could cause or contribute to any potential significant cumulative impact regarding these considerations. The potential for the Project or an alternative to cause or contribute to a potential significant cumulative impact with respect to the remaining geology, soils, or paleontological resources considerations is evaluated below.

Impacts related to geology, soils, and seismicity tend to be site-specific and depend on the local geology and soil conditions. For these reasons, the geographic scope for potential cumulative impacts consists of the Project site and adjacent areas. The Project could cause or contribute to cumulative effects for the duration between the onset of project activities to the conclusion of decommissioning and site restoration.

The Project may require shallow excavations which could affect local geologic conditions in areas adjacent to the Tranquillity, Adams East, Scarlet and Luna Valley projects. The Adams East and Tranquillity projects have already been constructed and so there would be no construction overlap between these projects and the proposed Project. Because the Scarlet project was approved September 9, 2021 and is expected to be under construction at the same time this Project would be (if it is approved), and given that the Luna Valley project was approved, this analysis assumes that construction of the Project could overlap with the construction timeframe for these other projects in the cumulative scenario. The area is subject to strong, seismically-induced ground shaking; however, the likelihood of construction of the Project having off-site geologic impacts is very low due to its limited excavation work. As discussed in Impact 4.8-1, the Project would be designed and constructed in accordance with the most current building code requirements, and the potential for the Project to exacerbate seismic hazards would be less than significant. State and local building regulations and standards have been established to address

and reduce the potential for projects to cause or exacerbate seismic hazard impacts. Any projects that are occurring in proximity to the Project would be required to comply with the same applicable provisions of these laws and regulations. Compliance with these requirements would reduce the potential for incremental impacts to a less than significant level. The purpose of the CBC (and related local ordinances) is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Based on compliance with these requirements, the incremental impacts of the Project when considered with impacts of other projects in the cumulative scenario would not combine to result in a significant cumulative impact related to seismic hazards.

If site drainage is not managed properly, drainage from the Project site in combination with drainage from other project sites could cause soil erosion or loss of topsoil at a local and regional level. As with the Project, any other ongoing projects would be required to comply with existing codes, standards, and permitting requirements (e.g., preparation of a SWPPP under the state construction general permit or similar plan) to reduce erosion impacts. Potential Project-related impacts to soil erosion and loss of topsoil would be reduced through the implementation of the BMPs identified in the SWPPP. Requirements in the state Construction General Permit are designed to reduce adverse cumulative effects of erosion and sedimentation. Compliance with state stormwater requirements and/or Fresno County for grading and drainage conditions would reduce the overall cumulative impact of these projects to a less-than-significant level.

The geographic scope of cumulative impacts to paleontological resources includes the Project site and adjacent areas where deposits with a high potential to contain paleontological resources could be disturbed. As stated above, construction of the Project could overlap with the construction of the Scarlet and Luna Valley projects. If there were paleontological resources that extended across areas of ground disturbance of the proposed Project and cumulative projects, the projects could result in the loss of paleontological resources, a potentially significant impact.

However, with implementation of Mitigation Measure 4.8-1: Unanticipated Fossil Discovery, the Project would effectively avoid the potential loss of paleontological resources in the event of inadvertent discovery during construction. Therefore, although implementation of cumulative projects could have significant effects related to paleontological resources, the Project's contribution to such effects would be less than significant.

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4.9 Greenhouse Gas Emissions

This section identifies and evaluates issues related to Greenhouse Gas (GHG) emissions in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments pertaining to GHG emissions (Appendix A, *Scoping Report*).

This analysis is based in part on the *Air Quality and Greenhouse Gas Emissions Analysis Technical Report* prepared for the Project (Appendix E-1). The preparers of this Draft EIR independently reviewed this and other materials prepared by or on behalf of the Applicant and determined them to be suitable with supplemental information added relative to construction-related water truck trips (Appendix E-2, *Construction Water Truck Emissions*) to inform (in combination with other materials included in the formal record) the preparation of this Draft EIR (Environmental Science Associates 2021).

4.9.1 Setting

4.9.1.1 Study Area

GHGs and climate change are a cumulative global issue. The California Air Resources Board (CARB) and U.S. Environmental Protection Agency (USEPA) regulate GHG emissions within California and the United States, respectively. While CARB has the primary regulatory responsibility within California for GHG emissions, local agencies have authority to adopt policies for GHG emissions reductions. CARB has divided California into regional air basins. The Project site is located in the San Joaquin Valley Air Basin (Air Basin), which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Though GHG impacts are global in nature, the study areas for purposes of this analysis of potential GHG emissions-related impacts are the Air Basin and the state.

4.9.1.2 Environmental Setting

Gases that trap heat in the atmosphere are known as greenhouse gases or "GHGs." GHGs allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation, causing the air in the atmosphere to warm up. The process is similar to the effect greenhouses have in raising their internal temperature. Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates Earth's temperature; however, emissions from human activities (such as fossil fuel-based electricity production and the use of motor vehicles) have elevated the concentration of GHGs in the atmosphere. Scientists agree that this accumulation of GHGs has contributed to an increase in the temperature of Earth's atmosphere and has contributed to global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most scientists agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). CO_2 is the most common reference gas for climate change. To account for the different warming potential of GHGs, GHG emissions often are quantified and reported as CO_2 equivalents (CO_2e). For example, SF_6 is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF_6, while comprising a small fraction of the total GHGs emitted annually world-wide, is a much more potent GHG with 22,800 times the global warming potential as CO_2, which has a global warming potential (GWP) of 1. In emission inventories, GHG emissions are typically reported as metric tons of CO_2e (MT CO_2e).[1] CO_2e is calculated as the product of the mass emitted of a given GHG and its specific global warming potential. CO_2 accounts for the majority of GHG emissions in CO_2e, both from developments and human activity in general.

In California, climate change is contributing to an escalation of serious problems, including raging wildfires, coastal erosion, disruption of water supply, threats to agriculture, spread of insect-borne diseases, and continuing health threats from air pollution (CARB 2017). In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Since the 1950s, the atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen. Changes in many extreme weather and climate events also have been observed since approximately 1950, including a decrease in cold temperature extremes, an increase in warm temperature extremes, an increase in extreme high sea levels, and an increase in the number of heavy precipitation events in a number of regions.

Surface temperature is projected to rise over the 21st Century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions. The expectation is that the ocean will continue to warm and acidify, and global mean sea level will rise. Continued emission of GHGs will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive, and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in GHG emissions which, together with adaptation, can limit climate change risks (IPCC 2015).

In 2019, United States GHG emissions were about 6,558 million MT CO_2e. GHG emissions have increased by 1.8 percent from 1990 to 2019, but are down from a high of 15.6 percent above 1990 levels in 2007. Emissions decreased from 2018 to 2019 by 1.7 percent. The decline reflects the combined impacts of many long-term trends, including population, economic growth, energy market trends, technological changes including energy efficiency, and carbon intensity of energy fuel choices. Between 2018 and 2019, the decrease in total GHG emissions was largely driven by the decrease in CO_2 emissions from fossil fuel combustion, which was a result of a 1 percent decrease in total energy use reflecting a continued shift from coal to less carbon intensive natural gas and renewables in the electric power sector. CO_2 accounted for the largest percentage of GHGs (80 percent), followed by CH_4 (10 percent), N_2O (7 percent), and fluorinated gases (3 percent). GHGs are emitted by all sectors of the economy, including transportation (28.6 percent), electricity generation (25.1 percent), industrial (22.9 percent), residential and

[1] The term “metric ton” is commonly used in the U.S. to refer to the metric system unit, tonne, which is defined as a mass equal to 1,000 kilograms. A metric ton is approximately 1.1 short tons and approximately 2,204.6 pounds.

commercial (12.7 percent), and agriculture (10.2 percent) (USEPA 2020). Forests and other lands contributed to an offset of 12 percent of GHG emissions in 2019 (USEPA 2021).

In 2019, California produced approximately 418.2 million MT CO_2e. Combustion of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for 39.7 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21.1 percent), the electric power sector (including both in-state and out-of-state sources) (14.1 percent), the agriculture and forestry sector (7.6 percent), and the commercial and residential sector (10.5 percent). High GWP emissions from refrigerants and other sources made up 4.9 percent of the emissions while the waste sector resulted in 2.1 per cent of the emissions (CARB 2021).

4.9.1.3 Regulatory Setting

Federal

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

In *Massachusetts v. Environmental Protection Agency* et al. (2007) 549 U.S. 497, California, other states, cities, and environmental organizations sued to require the USEPA to regulate GHGs as pollutants under the Clean Air Act. The U.S. Supreme Court ruled that GHGs fit within the Clean Air Act's definition of a pollutant and the USEPA had the authority to regulate GHGs. On December 7, 2009, the USEPA Administrator signed two findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- **Endangerment Finding:** The current and projected concentrations of six key GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the USEPA, the Department of Transportation, and the Department of Energy to establish by 2008 regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012 through 2016.

In 2010, the Obama Administration issued a memorandum directing the Department of Transportation, Department of Energy, USEPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, USEPA and NHTSA proposed stringent, coordinated federal GHG and

fuel economy standards for model years 2017 through 2025 light-duty vehicles (USEPA 2010). The proposed standards were designed to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017 through 2021, and NHTSA intended to set standards for model years 2022 through 2025 in a future rulemaking. However, on January 12, 2017, the USEPA finalized its decision to maintain the current GHG emissions standards for model years 2022 through 2025 cars and light trucks (USEPA 2017).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium-duty and heavy-duty trucks for model years 2014 through 2018. The standards for CO2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and recreational vehicles. According to the USEPA, this regulatory program was designed to reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium-duty and heavy-duty trucks. The phase two program applies to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (USEPA and Office of Transportation and Air Quality 2016).

American Recovery and Reinvestment Act

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA). The ARRA was passed in response to the economic crisis of the late 2000s with the primary purpose of maintaining existing jobs and creating new jobs. Among the secondary objectives of the ARRA was investment in “green” energy programs including facilitating funding for private companies developing renewable energy technologies; local and state governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and development of high-efficiency or electric vehicles (USEPA 2016).

State

The legal framework for GHG emission reduction in California has come about through executive orders, legislation, and regulations. The major components of California’s climate change initiative are summarized below.

Executive Order S-3-05

In 2005, in recognition of California’s vulnerability to the effects of climate change, Governor Schwarzenegger established EO S-3-05, which announced target dates by which statewide GHG emissions would be progressively reduced. These included a reduction of GHG emissions to 2000

levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80 percent below 1990 levels by 2050. As discussed below, the 2020 reduction target was codified in 2006 as Assembly Bill 32. However, the 2050 reduction target has not been codified and the California Supreme Court has ruled that CEQA lead agencies are not required to use it as a significance threshold. *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497.

Assembly Bill 32 and The Global Warming Solutions Act

In 2006, the California legislature passed AB 32 (Health and Safety Code Division 25.5, §38500 et seq.), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emissions limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). AB 32 anticipated that the GHG reduction goals will be met, in part, through local government actions. CARB identified a GHG reduction target of 15 percent from current levels for local governments (municipal and community-wide) and noted that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. The initial AB 32 emissions reduction limit was achieved in 2017, 3 years prior to the 2020 goal.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted amendments to the State CEQA Guidelines, as required by SB 97. These State CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments became effective on March 18, 2010.

Executive Order B-30-15

In 2015, Governor Brown issued Executive Order B-30-15, establishing a GHG reduction target of 40 percent below 1990 levels by 2030. This goal was set to make it possible to reach the ultimate goal of AB 32 to reduce GHG emissions by 80 percent under 1990 levels by 2050. Specifically, the Executive Order directed CARB to update the Scoping Plan to express this 2030 target in metric tons. As discussed below, on September 8, 2016, Governor Brown signed SB 32, which codified the 2030 reduction target called for in Executive Order B-30-15. CARB's 2017 Scoping Plan update (discussed below) addresses the 2030 target.

Senate Bill 32 and Assembly Bill 197

Signed into law on September 8, 2016, SB 32 (Amendments to California Global Warming Solutions Act of 2006: Emission Limit) amended Health and Safety Code Division 25.5 and codified the 2030 target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by Executive Order B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels. SB 32 states the intent of the legislature to continue to reduce GHGs for the protection of all areas of the state and especially the state's most disadvantaged communities, which are disproportionately impacted by the deleterious effects of climate change on public health. The law amended Health and Safety Code Division 25.5 and established a new climate pollution reduction target of 40 percent below 1990 levels by 2030, while AB 197 included provisions to ensure the benefits of State climate policies include disadvantaged communities.

Climate Change Scoping Plan

Pursuant to AB 32, CARB adopted a *Climate Change Scoping Plan* in December 2008 (re-approved by CARB on August 24, 2011) outlining measures to meet the 2020 GHG reduction goals (CARB 2008). In order to meet these goals, California had to reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from 2008 levels. The Scoping Plan relied on the requirements of SB 375 (discussed below) to implement the carbon emission reductions anticipated from land use decisions.

The Scoping Plan is required by AB 32 to be updated at least every 5 years. The *First Update to the Climate Change Scoping Plan* describes progress made to meet near-term emissions goals of AB 32, defines California's climate change priorities and activities for the next few years, and describes the issues facing the State as it establishes a framework for achieving air quality and climate goals beyond the year 2020. On December 14, 2017, CARB approved the final version of California's *2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017). The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy industry, transportation sustainability, natural and working lands, waste management, and water. CARB determined that the target Statewide 2030 emissions limit is 260 million MT CO_2e, and that further commitments will need to be made to achieve an additional reduction of 50 million MT CO_2e beyond current policies and programs. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal represented by SB 32 and ensure achievement of the 2050 limit set forth by EO B-30-15.

California Renewables Portfolio Standard

SB 1078 established the Renewables Portfolio Standard (RPS) in 2002, which required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from eligible renewable sources by 2017. SB 107 changed the target date to 2010. In November 2008, EO S-14-08 expanded the state's RPS goal to 33 percent renewable power by 2020. In September 2009, EO S-21-09 directed CARB (under its AB 32 authority) to enact regulations to help the state meet the 2020 goal of 33 percent renewable

energy. The 33 percent by 2020 RPS goal was codified in April 2011 with SB X1-2. The updated RPS applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. SB 350 was signed in October 2015, and requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Most recently, SB 100, signed by Governor Brown on September 10, 2018, increases the RPS requirement to 60 percent eligible renewables by 2030 and 100 percent by 2045.

Senate Bill 605

On September 21, 2014, Governor Brown signed Senate Bill 605 (SB 605), which required CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in the statute, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide." SB 605, however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, CARB completed an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identified research needs to address any data gaps, identified existing and potential new control measures to reduce emissions, and prioritized the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities.

Senate Bill 375

In addition to policy directly guided by AB 32, the legislature in 2008 passed SB 375, which provides for regional coordination in land use and transportation planning and funding to help meet the AB 32 GHG reduction goals. SB 375 aligns regional transportation planning efforts, regional GHG emissions reduction targets, and land use and housing allocations. SB 375 requires Regional Transportation Plans (RTPs) developed by the state's 18 metropolitan planning organizations (MPOs) to incorporate "Sustainable Communities Strategies" (SCS) that will achieve GHG emission reduction targets set by CARB and coordinate regional housing and transportation. The Fresno Council of Governments (FCOG) is the federally recognized MPO for Fresno County.

The 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 has prepared the *2018 Regional Transportation Plan and Sustainable Communities Strategy* for the region (FCOG 2017a). In 2010, as part of its mandate under SB 375, the CARB set specific GHG emission reduction targets for cars and light trucks for each of the state's 18 metropolitan planning organizations from a 2005 base year. The GHG targets set for the Fresno region in 2010 called for a five percent per capita reduction by 2020 and a 10 percent per capita reduction by 2035. SB 375 requires that FCOG demonstrate in its SCS that GHG emission reduction targets will be met for 2020 and 2035. FCOG adopted its latest Regional Transportation Plan/Sustainable Communities Strategy in 2017. The plan quantified a 5 percent reduction by

2020, 11 percent reduction by 2035, and 12 percent reduction by 2042 (FCOG 2017a). Project consistency with the *2018 Regional Transportation Plan and Sustainable Communities Strategy* would therefore support AB 32 and SB 32 GHG reduction goals.

Senate Bill 1368

SB 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities by February 1, 2007. The California Energy Commission (CEC) also was required to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas-fired plant. The legislation further requires that all electricity consumed in California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC. The Project, as a renewable energy generation facility, would comply with the GHG emission performance standard requirements of SB 1368.

17 Cal. Code Regs. §95350 et seq.

The purpose of this regulation is to achieve GHG emission reductions by reducing SF_6 emissions from gas-insulated switchgear. Switchgear equipment containing SF_6 gas would be installed at the on-site substation. Owners of such switchgear must not exceed maximum allowable annual emissions rates, which are reduced each year until 2020, after which annual emissions must not exceed 1.0 percent. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF_6, and maintain records of these for at least 3 years. Additionally, by June 1 each year, owners also must submit an annual report to CARB's Executive Officer for emissions that occurred during the previous calendar year.

Local

San Joaquin Valley Air Pollution Control District

In August 2008, the SJVAPCD's Governing Board adopted the *Climate Change Action Plan* (CCAP). The CCAP 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.

On December 17, 2009, the SJVAPCD adopted *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA,* and the policy: *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 is a method of streamlining the CEQA process of determining significance and is not a required emission-reduction measure. Projects implementing BPS would be determined to have a less than cumulatively considerable impact. However, SJVAPCD's adopted BPS are

specifically directed at reducing GHG emissions from stationary sources that require a permit from the SJVAPCD or from improved energy efficiency and reduced vehicle miles travelled associated with operations of development projects; therefore, the adopted BPS would only be applicable to the Project's emergency generator, because it is the only component under the Project that would be a stationary source of emissions and because the Project is not a typical development project that would consume energy or result in a large increase in vehicle miles travelled.

CAPCOA Guidance

California Air Pollution Control Officers Association (CAPCOA) recommended an interim 900 MT CO_2e screening level as a theoretical approach to identify projects that require further analysis and potential mitigation (CAPCOA 2008). Following CAPCOA's analysis of development applications in various cities, it was determined that the threshold of 900 MT CO_2e per year would achieve the objective of 90 percent capture and ensure that new development projects would keep the State on track to meet its AB 32 goals. SJVAPCD supports the use of the interim threshold established by CAPCOA when adopted thresholds are not applicable (SJVAPCD 2009b).

Fresno Council of Governments

SB 375 requires MPOs to prepare a Sustainable Communities Strategy in their Regional Transportation Plan. As discussed above, the FCOG developed the *2018 Regional Transportation Plan and Sustainable Communities Strategy* as the region's strategy to fulfill the requirements of SB 375. The *2018 Regional Transportation Plan and Sustainable Communities Strategy* 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 *2018 Regional Transportation Plan and Sustainable Communities Strategy* links the goals of sustaining mobility with the goals of fostering economic development; enhancing the environment; reducing energy consumption; promoting transportation-friendly development patterns; and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. The *2018 Regional Transportation Plan and Sustainable Communities Strategy* does not require that local general plans, specific plans, or zoning be consistent with it but provide incentives for consistency for governments and developers.

Fresno County 2000 General Plan

The Fresno County General Plan does not contain any goals and policies applicable to GHG emissions and climate change. The General Plan includes energy efficiency goals and policies applicable to new and existing housing. These would not apply to the Project.

4.9.2 Significance Criteria

The Project would result in significant impacts to GHG emissions if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.

4.9.3 Direct and Indirect Effects

4.9.3.1 Methodology

Neither CEQA Guidelines Section 15064.4 nor any other law[2] requires or endorses a specific analytical methodology or quantitative criteria for determining the significance of GHG emissions. Rather, lead agencies are to make a "good faith effort" to "describe, calculate or estimate" GHG emissions and to consider the extent to which the project would increase or reduce GHG emissions; exceed a locally applicable threshold of significance; or comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." A project may be found to have a less-than-significant impact related to GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (14 Cal. Code Regs. §15064(h)(3)).

As described above, the SJVAPCD has adopted its *Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA*. A GHG analysis is required to be included in CEQA documents for all non-exempt projects. The SJVAPCD guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change and supports the use of the interim threshold established by CAPCOA when adopted thresholds are not applicable (SJVAPCD 2009b). Because SJVAPCD's adopted BPS are specifically directed at reducing GHG emissions from stationary sources or from improved energy efficiency and reduced vehicle miles travelled, and adopted quantitative thresholds do not apply to this Project, this analysis relies on CAPCOA's interim threshold for operational emissions from industrial projects of 900 MT CO_2e to determine whether the Project's GHG emissions would be significant.

CAPCOA recommends the interim 900 MT CO_2e screening level as a theoretical approach to identify projects that require further analysis and potential mitigation (CAPCOA 2008). Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively small portion of the overall lifetime project GHG emissions. It is common practice to amortize construction-related GHG emissions over the project's lifetime in order to include these emissions as part of a project's annualized total emissions so that GHG reduction

[2] See *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 204 (identifying three "potential options" for lead agencies evaluating cumulative significance of a proposed land use development's GHG emissions and explicitly stating that none of the three options came with a "guarantee" that it would be sufficient if later challenged).

measures would address construction GHG emissions as part of the operational GHG reduction strategies. As stated in the Project Description, the Project would have a useful life of 35 years. Therefore, the construction GHG emissions from the Project have been annualized over a 35-year period and considered along with the annual operational emissions for comparison with the CAPCOA significance threshold. The Air Quality and Greenhouse Gas Emissions Analysis Technical Report that this section is based on uses a project life of 30 years, which is not specific to the Project. Therefore, annualized emissions have been re-estimated to account for the Project's 35-year permit term.

For this Project, the major source of GHG during construction and decommissioning would be the combustion of fuel in construction equipment, in vehicles used to haul materials, and in vehicles used by workers commuting to and from the site. Operational GHG emissions would result from employee vehicle trips made to and from the site and from the on-site emergency generator testing and maintenance. GHG emissions from construction and decommissioning were derived from the CalEEMod model run conducted for the air quality analysis. Total construction and decommissioning emissions from the Project were annualized over a project life and combined with the Project's long-term annual operational emissions derived from CalEEMod for comparison with the significance threshold.

Project emissions of CO_2, CH_4, and N_2O were multiplied by their respective global warming potentials of 1, 25, and 298, respectively, and summed together to estimate CO_2e emissions. Additionally, Project GHG emissions would include fugitive emissions of SF_6 from high voltage circuit breakers at the on-site substation. The global warming potential of SF_6 is equivalent to 22,800 times that of CO_2. CO_2e emissions resulting from SF_6 gas leakage at the Project site were estimated for the seven high-voltage circuit breakers with a total combined capacity of 900 pounds of SF_6, assuming a maximum leak rate of 0.5 percent per year. The Project site is currently dry-farmed (or fallow) and the implementation of the Project would result in a potential net reduction in carbon sequestration capacity due to Project-related rangeland grass removal. The potential loss of carbon sequestration capacity (in terms of CO_2) from Project-related dry-farmed rangeland grass removal was estimated using the U.S. Department of Energy-published sequestration rate for "poorly managed grasslands" of 0.1 megagrams carbon per hectare-year (DOE 2011).

The potential for the Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG was assessed by examining any potential conflicts of the Project with the GHG reduction measures related to implementation of AB 32 and SB 32 goals and potential conflict with CARB's *Climate Change Scoping Plan*. Under the SJVAPCD's CEQA guidance for GHG, a project would not have a significant GHG impact if it is consistent with an applicable qualified plan to reduce GHG emissions (SJVAPCD 2009a). The applicable qualified plans are FCOG's RTP/SCS and the Scoping Plan.

4.9.3.2 Direct and Indirect Effects of the Project

Criterion a) Whether the Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact 4.9-1: The Project would generate GHG emissions, directly and indirectly, that could have a significant impact on the environment. (*Less than Significant Impact*)

Construction Emissions

The Project's construction activities would involve the use of off-road construction equipment, vendor trucks, and worker vehicles, all of which would emit GHGs. Project construction is expected to begin in January, and last for a period of 15 months and emissions generated during construction would be short-term in nature, lasting only for the duration of the construction period. **Table 4.9-1** presents construction emissions for the Project in the first calendar year from both on-site and off-site emission sources. If onsite water is used from a new or existing well, then the majority of the water truck emissions would be avoided, since water truck delivery would not be required. Approximately 10 percent of the estimated water truck emissions would still occur from water trucks delivering water from the well to locations onsite (Appendix E-3). Additional details on calculations and CalEEMod output files can be found in the Air Quality and Greenhouse Gas Emissions Analysis Technical Report included as Appendix E-1.

TABLE 4.9-1
ESTIMATED ANNUAL CONSTRUCTION GREENHOUSE GAS EMISSIONS

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
Annual Project Emissions (not included water truck-related emissions)	4,704.5	0.4	<0.1	4,715.9
Water Truck Emissions	356.3	<0.1	0.1	371.1
Total Annual Emissions	4,997.7	0.4	<0.1	5,089.0
Amortized Annual Emissions over 35 Years (Metric Tons per Year)				145.4

NOTES:

Columns may not total precisely due to rounding.
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; N_2O = nitrous oxide

SOURCE: Based on Table 14 of Appendix E-1 and Appendix E-2.

As shown in Table 4.9-1, the Project would generate construction emissions of 4,716 MT CO_2e over the 15-month construction period. When amortized over the 35-year Project lifetime, annual emissions would be 145.4 MT CO_2e per year.

Operation and Maintenance Emissions

The Project's annual emissions associated with operation and maintenance activities are shown in **Table 4.9-2**. Operation and maintenance of the Project would generate GHG emissions from motor vehicle trips to and from the Project site; energy use (electricity consumed by the Project,

TABLE 4.9-2
ESTIMATED ANNUAL OPERATIONAL GREENHOUSE GAS EMISSIONS

Emission Source	CO_2	CH_4	N_2O	SF_6	CO_2e
	Metric Tons per Year				
Area	<0.01	0.0	0.0	0.002	48.8
Energy [a]	11.7	<0.01	<0.01	0.0	11.8
Mobile	219.8	<0.01	0.0	0.0	220.0
Waste	1.1	0.07	0.0	0.0	2.8
Water	0.3	0.14	<0.01	0.0	3.8
Project Total	231.6	0.21	<0.01	0.002	287.2

NOTES:
a Includes GHG emissions from the operation of the emergency generator for routine testing and maintenance.
SOURCE: Table 16 of Appendix E-1

as required when the Project is not powered by on-site energy generation); solid waste disposal; and from the generation of electricity associated with supply, treatment, and distribution of water used by the Project and transport and treatment of wastewater generated.

An additional source of GHG emissions would be fugitive emissions from the 230 kV breakers containing SF_6 gas at the proposed on-site substation. It is estimated that the Project will have a total of up to seven 230 kV breakers, containing a total of 900 pounds of SF_6 gas. The Project must comply with CARB's *Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear* (17 Cal. Code Regs. §95350 et seq.), which requires that annual emissions of SF_6 not exceed 1.0 percent after 2020. Fugitive SF_6 emissions from the seven circuit breakers were estimated assuming a maximum annual leak rate of 0.5 percent based on the manufacturer's guaranteed specifications (USEPA 2002). Estimated SF_6 emissions also are included in Table 4.9-2.

Carbon sequestration is the process by which CO_2 is removed from the atmosphere and deposited into a carbon reservoir (e.g., vegetation). Trees and vegetation take in CO_2 from the atmosphere during photosynthesis, break down the CO_2, store the carbon within plant parts, and release the oxygen back into the atmosphere. The Project site is zoned AE-20 (Exclusive Agricultural District) and has been historically disked and intermittently dry-farmed in recent years. Existing land uses surrounding the site are dominated by agricultural production and a few solar energy projects, including the Tranquillity Solar Project near the southwestern corner of the Project.

The Project would remove existing vegetation from the site, which would result in a loss of carbon stock and carbon sequestration; this includes above-ground carbon, stored in the removed vegetation, and below-ground carbon, such as in the soil. Soil carbon is released when soil is ripped in preparation for construction activities. In addition, there would be a loss of ongoing carbon sequestration potential of the site when vegetation is removed. These losses are accounted for in the emissions shown in Table 4.9-2.

Decommissioning Emissions

Decommissioning of the Project would result in GHG emissions primarily associated with use of off-road equipment, on-road vendor trucks, and worker vehicles. The total decommissioning GHG emissions were calculated, amortized over 35 years, and added to the total operational emissions for comparison with the GHG significance threshold of 900 MT CO_2e per year.

CalEEMod was used to calculate the annual GHG emissions based on the decommissioning scenario described in Section 2.5.7, *Decommissioning and Site Reclamation*. Decommissioning of the Project is anticipated to last 6 months, from January to the end of June. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (e.g., haul trucks, vendor trucks, and worker vehicles). **Table 4.9-3** presents decommissioning emissions for the Project in 2054 from on-site and off-site emission sources. As described in Appendix E-1, CalEEMod was used to estimate decommissioning emissions for the year 2050, the farthest future year available for analysis in CalEEMod. However, this represents a conservative analysis for decommissioning emissions as vehicle and construction equipment fleet efficiencies would potentially increase from year 2050 to year 2054 resulting in lower emissions in 2054 than those presented in Table 4.9-3.

TABLE 4.9-3
ESTIMATED GREENHOUSE GAS EMISSIONS FROM DECOMMISSIONING

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2054	1,915.3	0.04	0.0	1,916.3
Amortized Annual Emissions over 35 Years (Metric Tons per Year)				54.8

NOTES:
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; N_2O = nitrous oxide
SOURCE: Table 15 of Appendix E-1

Estimated Project-generated decommissioning emissions amortized over 35 years would be approximately 55 MT CO_2e per year. As with Project-generated construction emissions, GHG emissions generated during decommissioning of the Project would be short-term in nature, lasting only for the duration of the decommissioning period, and would not represent a long-term source of GHG emissions.

Emissions Offset from Existing Fossil-Fuel Power Plants

The Project would generate renewable energy, which offsets GHG emissions generated by existing fossil-fuel power plants to the extent that it would serve demand that otherwise would be served with a fossil-fuel powered source. Using the installed tracker capacity of 200 megawatt alternating current (MW_{AC}), the Project is anticipated to generate approximately 392,541,280 kilowatt hours (kWh) or 392,541 megawatt hours (MWh) per year (Appendix E-1). These factors reflect the available daylight hours, conversion of DC to AC, and various system losses using the National Renewable Energy Laboratory's PV Watts online solar calculator. Based on emissions reported by PG&E to CARB as part of its annual reporting requirements, the CO_2 emission rate for PG&E owned fossil plants was 876 pounds per MWh (PG&E 2019).

Using this emission rate and conservatively not accounting for reduction in CH_4 and N_2O emissions, the Project would result in a potential reduction of 155,975 MT CO_2e per year if the electricity generated by the Project were to be used in place of electricity generated by fossil-fuel sources. It is a reasonable assumption that renewable energy from the proposed Project would replace existing fossil fuel-generated energy in light of SB 100, which requires all electric utility companies, like PG&E, to make progress towards providing 100 percent renewable energy by 2045. This analysis assumes that the Project would displace only that portion of the California electricity market that is generated from fossil fuels and does not include the portion generated by non-combustion sources such as wind, solar, nuclear, or hydroelectric.

Summary

Table 4.9-4 shows a summary of all Project-generated emissions and offsets. As shown in Table 4.9-4, after accounting for the Project's annualized construction and decommissioning emissions, operational emissions, emissions from reduced carbon sequestration and emissions offset from existing fossil fuel power plants, the Project would result in a net reduction of 155,280 MT CO_2e per year and a net benefit to the environment. Therefore, the Project would not generate GHG emissions that would have a significant impact on the environment; this impact would be less than significant.

TABLE 4.9-4
SUMMARY OF TOTAL PROJECT EMISSIONS

Source	Annual Project Emissions (MT CO_2e per year)
Amortized Construction Emissions over 35 Years	145.4
Project Operational Emissions	287.2
Amortized Decommissioning Emissions over 35 Years	54.8
Reduction in Carbon Sequestration	207.6
Emissions Offset from Existing Fossil-Fuel Power Plants	-155,975
Total Project Emissions	-155,280
Significance Threshold	900
Significant Impact?	No

NOTES:
CO_2e = carbon dioxide equivalent
SOURCE: Based on Appendices E-2 and E-3.

Mitigation: None required.

Criterion b) Whether the Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Impact 4.9-2: The Project could conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. (*Less than Significant Impact*)

Under the SJVAPCD's CEQA guidance for GHGs, a project would not have a significant GHG impact if it is consistent with an applicable qualified plan to reduce GHG emissions, and a CEQA-compliant analysis was completed for the GHG reduction plan. The Project involves the construction, operation and maintenance, and decommissioning of a solar facility that would serve as a new renewable source of energy in Fresno County. As discussed below, the Project would be consistent with the 2017 Scoping Plan and would not impede the GHG reductions from cars and light duty vehicles required by FCOG's RTP/SCS.

Scoping Plan

The Scoping Plan includes the following Electricity Goals:

- Achieve sector-wide, publicly-owned utility, and load-serving entity specific GHG reduction planning targets set by the State through Integrated Resource Planning.
- Reduce fossil fuel use.
- Reduce energy demand.

These goals would be accomplished through the Scoping Plan's ongoing and proposed measures, including:

- Per SB 350, with respect to Integrated Resource Plans, establish GHG planning targets for the electricity sector, publicly-owned utilities, and load-serving entities.
- Per SB 350, ensure meaningful GHG emissions reductions by publicly-owned utilities and load-serving entities through Integrated Resource Planning.
- Per SB 350, increase the RPS to 50 percent of retail sales by 2030 and ensure grid reliability.
- Increase retail customers' use of renewable energy through optional utility 100 percent renewable energy tariffs.
- Continue implementation of the Regulations Establishing and Implementing a Greenhouse Gases Emission Performance Standard for Local Publicly Owned Electric Utilities as required by SB 1368 (Perata, Chapter 598, Statutes of 2006), which effectively prohibits electric utilities from making new long-term investments in high-GHG emitting resources such as coal power.

In keeping with the renewable energy target under the Scoping Plan and as required by SB 350, the Project would provide a source of renewable energy to help the State achieve the RPS of 50 percent by 2030. Renewable energy, in turn, potentially offsets GHG emissions generated by fossil-fuel power plants.

As discussed above under Impact 4.9-1, renewable energy from the Project would replace existing fossil fuel-generated energy and help the state achieve the renewable energy targets established under the Scoping Plan and SB 100 by providing a source of renewable energy to

achieve the RPS of 60 percent by the end of 2030 and 100 percent by 2045. While the Project would generate short-term GHG emissions from construction and decommissioning, as well as from long-term operation, maintenance and loss of carbon sequestration, it would result in a net reduction in GHG from the production of solar energy that would potentially replace energy generated by fossil fuels. The Project would assist in the attainment of the state's goals by using a renewable source of energy that could displace electricity generated by fossil-fuel-fired power plants, and therefore would comply with the goals and objectives of the Scoping Plan.

2018 FCOG RTP/SCS

The FCOG's RTP/SCS is an applicable plan adopted for the purpose of reducing GHGs from the land use and transportation sectors in Fresno County and was adopted after completion of a Program EIR. CARB approved the RTP/SCS in 2015. The RTP/SCS was amended in 2019. The Project could result in a significant impact due to a conflict with an applicable plan, policy, or regulation if it would be inconsistent with the adopted FCOG RTP/SCS.

The SCS responds to SB 375's requirement for metropolitan planning organizations to link transportation funding decisions to land use to decrease GHG emissions from cars and light duty trucks. The per capita GHG reduction target from transportation emissions for FCOG are 10 percent from 2010 levels by 2035. In addition, FCOG has adopted a 2042 target of a 12 percent reduction from 2010 levels. The GHG emissions FCOG used to determine the measures in its RTP/SCS are based on the General Plans of local cities and counties, as well as demographic data trends and projections that include household, employment, and total population statistics. As discussed in Chapter 4.12, *Land Use and Planning*, the Project is consistent with Fresno County's General Plan. The Project would require up to seven full-time equivalent personnel consisting of plant operators and maintenance technicians. The additional jobs estimated for the Project would be well within the County's growth projection of 500 additional jobs from 2020 to 2025 assumed for land designated agricultural in the FCOG 2018 RTP/SCS (FCOG 2017b). The 2018 RTP/SCS notes that its land use assumptions include the loss of 188 acres of farmland but notes the importance of conserving prime and unique farmland, and farmland of statewide importance. The Project would not directly contribute to the conversion of such farmland, as stated in Section 4.3, *Agriculture and Forestry Resources.* Therefore, the Project would not conflict with the FCOG 2018 RTP/SCS.

The Project would not conflict with an applicable plan regulating GHG emissions and would have an associated less-than-significant impact.

Mitigation: None required.

PG&E Infrastructure

As described in Chapter 2, *Project Description*, energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Tranquillity Switching Station. Construction and operation of the interconnection infrastructure would add GHG emissions from construction equipment, and construction vehicle trips. According to the preliminary Project construction schedule, the new transmission poles would be constructed

within the Project construction timeframe analyzed above and is already accounted for in the Table 4.9-1. Furthermore, no additional vehicle trips (workers or trucks) would be needed to operate and maintain, or to decommission PG&E infrastructure that have not already been accounted for in the discussion of Project operation and maintenance and decommissioning impacts above. Therefore, the GHG impacts discussed under Impacts 4.9-1 and 4.9-2 above for the Project include consideration of the PG&E infrastructure component of the Project, and the combined impacts of the Project and PG&E infrastructure would be less than significant.

4.9.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Compared to the Project, Alternative 1 would develop a solar generation facility upon a 20 percent reduced acreage footprint. a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce the Project's potential significant impacts relating to vehicle emissions and traffic. Due to the decreased footprint of soil disturbance, there would be a corresponding reduction in fugitive dust emissions. On the other hand, Alternative 1 would produce less renewable energy and therefore offset less greenhouse gas emissions from construction, operation, and decommissioning. As with the Project, GHG impacts under Alternative 1, Reduced Acreage Alternative would be less than significant.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. No construction equipment would be operated or delivered to the site, and no construction vehicle trips would be made to, from, or within the site relative to baseline conditions. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disced and left fallow. There would be no reduction in carbon sequestration and direct GHG emissions generated from the operation of the emergency generator at the site or from vehicle trips made to the site for operation and maintenance purposes. The No Project Alternative also would not result in the generation of renewable energy that could replace energy generated by more GHG producing fossil fuels. The No Project Alternative would not create impacts related to GHG emissions, nor would it contribute to reducing GHG emissions by offsetting current GHG-producing fossil-fueled energy.

4.9.4 Cumulative Analysis

Global GHG emissions are inherently a cumulative concern that is understood for CEQA purposes to be an existing significant and adverse condition. Accordingly, the significance of GHG emissions in this analysis is determined based on whether such emissions would have a cumulatively considerable impact on global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the Project's direct and/or indirect generation or offset of GHG emissions on the region and the state. CAPCOA considers GHG impacts to be exclusively cumulative impacts, in that no single project could, by itself, result in a substantial change in climate (CAPCOA 2008). Therefore, the evaluation of cumulative GHG impacts presented in this section evaluated whether the Project or alternatives would make a considerable contribution to cumulative emissions of GHG. The Project would result in a net reduction in GHG emissions over the duration of the use permit period and would not conflict with the state's GHG reduction goals. Therefore, the Project-specific incremental impact relative to GHG emissions would not be cumulatively considerable and the cumulative impact would be less than significant.

4.9.5 References

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4.10 Hazards and Hazardous Materials

This section identifies and evaluates issues related to Hazards and Hazardous Materials in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The County received scoping input from the California Department of Conservation, Geologic Energy Management Division (CalGEM) confirming no oil wells are located in the Project site (Appendix A, *Scoping Report*). The County reviewed and considered this input in preparing the Draft EIR. The County also considered data and other information contained in the Phase I Environmental Site Assessment (Site Assessment) prepared for the Project by KTA Associates, Inc. (Appendix H). The preparers of this Draft EIR independently reviewed the study and determined it to be suitable for reliance, in combination with other materials included in the formal record, in the preparation of this Draft EIR.

4.10.1 Setting

4.10.1.1 Study Area

The study area for the analysis of potential impacts to hazards and hazardous materials is defined to include the Project site and a 1-mile radius around the Project site plus the haul routes that would be used to transport hazardous materials and wastes associated with the Project.

4.10.1.2 Environmental Setting

The Project site is located in a rural, agricultural area of Fresno County in the western San Joaquin Valley. Hazardous waste handlers and generators in the County include industrial facilities, commercial businesses, public and private institutions, and residences. Agricultural land use also can involve the storage and handling of hazardous materials and wastes including for the application of pesticides and the storage and use of fuels. Gasoline stations and other facilities that utilize or store fuels, solvents, chemicals, or other hazardous materials represent other potential sources of hazardous materials in rural areas. The presence of these potential sources of hazardous materials, if encountered, can cause exposures that may result in adverse environmental and health effects depending on the extent of exposure.

Definition of Hazardous Materials

Materials and waste may be considered hazardous if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode, or generate vapors when mixed with water (reactive). The term “hazardous material” is defined in California Health and Safety Code Section 25501(n)(1) as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

In some cases, past industrial or commercial uses on a site can result in spills or leaks of hazardous materials and/or petroleum products to the environment, thus resulting in soil or groundwater contamination. Federal and state laws require that soils having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain regulatory standards must be handled and disposed of as hazardous waste during excavation, transportation, and disposal. California Code of Regulations, Title 22, Section 66261.20-24 contains technical descriptions of characteristics that would cause soil to be classified as a hazardous waste.

The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government. See Section 4.10.1.3, *Regulatory Setting*.

Hazardous Materials Database Search

To evaluate the potential presence of hazardous materials in soil and groundwater, a regulatory database search of sites within 1-mile of the Project site was conducted to identify the documented use, storage, generation, and/or releases of hazardous materials and/or petroleum products.

In California, regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5. However, subsequent changes in web-based information availability since that time have made a consolidation of this list no longer necessary; the databases now are maintained individually. The State Water Resources Control Board (SWRCB) GeoTracker database contains regulatory data about leaking underground storage tanks (LUSTs), Department of Defense, spills-leaks-investigations-cleanups and landfill sites. The Department of Toxic Substances Control (DTSC) EnviroStor database includes facilities that are authorized to treat, store, dispose, or transfer hazardous waste and includes the following site types: Federal Superfund sites National Priority List; state response, including military facilities and State Superfund; voluntary cleanup; and school sites that are being evaluated by the DTSC for possible hazardous materials contamination (DTSC 2021). The EnviroStor database also contains current and historical information relating to permitted and corrective action facilities.

A search of the GeoTracker and EnviroStor databases indicates that there are no known active/open hazardous materials sites within the Project site (SWRCB 2021a; DTSC 2021). There are two sites (a cleanup program site and a LUST cleanup site) located adjacent to the Project site on the northwest at the corner of West Adams Avenue and Derrick Avenue (SR 33). The cleanup program site, which is on the Britz Fertilizers property, had a leaking above-ground diesel storage tank that contaminated soil near the above-ground tank and contaminated the shallow perched groundwater. The case was closed and a closure letter for the site was issued on January 17, 2003. The closure letter indicated that soil and groundwater contamination at the site was remediated, and any remaining contaminates in the soil are immobile and would naturally biodegrade over time (RWQCB 2003).

The LUST cleanup site is a Westlands Water District-owned property where the District discovered a gasoline leak on July 17, 1995. No cleanup was necessary and the case was closed on May 20, 1998 (SWRCB 2021b).

Phase I Investigation

A Phase I Environmental Site Assessment was prepared for the Project site by KTA Associates (Appendix H). The purpose of the Phase I assessment was to identify and characterize any Recognized Environmental Conditions (RECs) that may exist at the Project site. These objectives were met by reviewing current and historical site uses, surrounding property uses, and available environmental regulatory records. Additionally, a site investigation was performed, and landowner interviews were conducted.

RECs are defined as an indication of the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment; conditions determined to be *de minimis* are not RECs (Appendix H).

A representative for the Westlands Water District was interviewed about the history of the parcels that comprise the Project site. The Westlands Water District representative was not aware of any spills of hazardous materials at the Project site, not aware of any other environmental contamination issues within the Project site, and not aware of any contamination on any neighboring properties; no RECs were identified during the interview process (Appendix H).

Naturally Occurring Selenium in Soil

Selenium is a trace element that is a naturally-occurring, solid substance that is widely and unevenly distributed in the earth's crust (ATSDR 2003). In some parts of the United States, especially in the western states, some soils are found to naturally have higher levels of selenium compounds. Some plants can build up selenium to levels that harm livestock feeding on them, thus causing people to consume too much selenium if they eat a lot of locally grown grains and vegetables or animal products that have built up high levels of selenium (ATSDR 2003).

Selenium remains an essential nutrient for humans and animals, which are both exposed to low levels of selenium daily through food, water, and air (ATSDR 2003, NIH 2020). The recommended dietary allowance for selenium for adults is 55 micrograms (mcg) per day with recommendations for lower concentrations for infants and children (NIH 2020). The general public rarely breathes high levels of selenium although workers in industrial facilities may inhale selenium dust in workplace air. The most common intake of selenium is through the ingestion of food products with a high buildup of selenium levels. High levels of exposure to selenium in water and food supplies can cause clinical signs of toxicity, including loss of hair or fingernails, numbness in fingers or toes, loss of control in arms and legs (in extreme cases), or circulation problems (USEPA 2000). According to the Agency for Toxic Substances and Disease Registry (ATSDR), "No human populations in the United States have been reported with long-term selenium poisoning, including populations in the western part of the country where selenium levels are naturally high in the soil" (ATSDR 2003). Selenium concentrations for soils at properties neighboring the Project site average 1 milligram per kilogram (mg/kg), which is

considered "moderately elevated" relative to the common range (0.1-1.4 mg/kg) for Western U.S. and San Joaquin Valley soils (USBR 2005). Although on site soils were not tested for selenium, this analysis assumes that levels are consistent with those of neighboring properties.

Photovoltaic (PV) Solar Panels

PV solar panels are manufactured to be quite durable; however, if chipped or broken, cadmium could be released into the environment. The exact type of photovoltaic (PV) solar panels that would be installed on the Project site have yet to be determined, however, it is anticipated that the proposed PV solar panels would be made from a polycrystalline silicon or thin-film technology. Polycrystalline silicon PV panels may include Cadmium Telluride (CdTe) technology. Elemental cadmium (Cd), which forms CdTe when reacted with tellurium (Te), is a lung carcinogen, and long-term exposure can cause detrimental effects on kidney and bone (Fthenakis 2003). However, CdTe is in the environmentally stable form of a compound rather than the leachable form of a metal. OSHA treats CdTe similarly to Cd and thus all facilities working with CdTe should use the same precautions that apply to Cd. Because such materials are in a solid and non-leachable state, broken polycrystalline silicon PV panels would not be a source of pollution to surface water, stormwater, or groundwater (Fthenakis 2003).

The CdTe compound is encapsulated in the PV module with the PV module containing a very small amount of Cd. The amount of Cd within a CdTe module is proportional to the area of the module and thickness of the layers. Most CdTe layers are 1-3 microns thick which could contain anywhere from 3 to 9 g/m2 of Cd. For comparison a 1-kW CdTe PV system contains as little cadmium as seven C-sized nickel cadmium batteries. In addition, as technology advances it is anticipated layer thickness would decrease therefore decreasing the amount of Cd in the modules (Fthenakis 2003).

It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil (Fthenakis 2020). During the PV module manufacturing process, CdTe is bound under high temperature to a sheet of glass by vapor transport deposition, coated with an industrial laminate material, insulated with solar edge tape, and covered with a second sheet of glass. The module design results in the encapsulation of the semiconductor material between two sheets of glass thereby preventing the exposure of CdTe to the environment (Fthenakis 2003).

Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules (Fthenakis et. al. 2020, Matsuno, 2013). These studies have consistently concluded that during normal operations and foreseeable accident (e.g., fires, breakage), CdTe PV modules do not present an environmental risk. No emissions from CdTe PV would be released during fires because Cd would dissolve into the molten glass. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled. CdTe PV modules have proven to pass the Federal toxicity characteristic leaching procedure (TCLP) criteria for non-hazardous waste allowing the modules to be disposed of in landfills (Fthenakis 2020).

Batteries

Lithium ion batteries such as those proposed as part of the energy storage system are generally safe and unlikely to fail, provided there are no defects and the batteries are not damaged. When such batteries fail to operate safely or are damaged, they may present a fire and/or explosion hazard.

Schools, Airports, and Other Sensitive Receptors

There are no schools within 0.25 mile of the Project site. The nearest schools to the Project site are Tranquillity High School and Tranquillity Elementary School, both of which are located approximately 5.4 miles to the northeast.

The closest airport to the Project site is the San Joaquin Airport, which is located approximately 7 miles to the east.

The closest sensitive receptors to the Project site are located north of West Adams Avenue, and at the intersection of West Adams and South Monterey Avenue, approximately 185 feet from the Project site's northern boundary.

4.10.1.3 Regulatory Setting

This section describes the regulatory oversight of hazardous materials storage and handling, emergency response, site investigation and cleanup, and worker safety. In addition, regulations regarding fire hazards and local plans and policies are discussed.

Federal

Hazardous Materials Management

The federal agencies with primary responsibility for hazardous materials management include the U.S. Environmental Protection Agency (USEPA), U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (USDOT).

State and local agencies often have either parallel or more stringent regulations than these federal agencies. In most cases, state law mirrors or overlaps federal law, and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated.

Hazardous Materials Transportation

The USDOT regulates hazardous materials transportation on all interstate roads pursuant to its authority under the Hazardous Materials Transportation Uniform Safety Act (49 U.S.C. §5101 et seq.). The purpose of the Act is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce" (49 U.S.C §5101).

Within California, the state agencies with primary responsibility for enforcing federal and state regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and California Department of Transportation (Caltrans). Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

Clean Air Act

Regulations under the Clean Air Act are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store minimum quantities (called threshold quantities) or greater of listed regulated substances to develop a Risk Management Plan, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

Oil Pollution Prevention

Part 112 of Subchapter D of Chapter I of Title 40 of the Federal Code of Regulations (40 CFR §112) establishes procedures, methods, equipment, and other requirements to prevent discharges from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States. These regulations require facilities with a single tank or cumulative aboveground storage capacities of 1,320 gallons or greater of petroleum and that could reasonably be expected to discharge oil to navigable waters in quantities that may be harmful to prepare and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan (40 CFR §112.1). The purpose of an SPCC Plan is to form a comprehensive federal/state spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility for which the SPCC Plan is written. As the Project would require the use of heavy equipment containing petroleum products (i.e., diesel, gasoline, motor oil, etc.) during construction, operation, maintenance, and decommissioning, and diesel fuel and gasoline may be stored on-site for refueling the equipment, an SPCC Plan may be required and be applicable to the Project. If an SPCC Plan is not required by regulation, the Project would prepare and adhere to a substantively similar plan. See Section 2.8, *Erosion Control and Water Quality*, in the Project Description, which describes this Applicant-proposed commitment.

Comprehensive Environmental Response and Liability Act and Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) amends the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and governs hazardous substances. The applicable part of SARA for the Project is Title III, otherwise known as the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA). EPCRA establishes requirements for federal, state, and local governments, as well as Indian Tribes and industry members regarding emergency planning and reporting on hazardous and toxic chemicals (USEPA 2021). Key sections of the law include:

§304: *Requires immediate notification to the local emergency planning committee (LEPC) and the state emergency response commission (SERC) when a hazardous material is released in excess of its reportable quantity (RQ). If a CERCLA-listed hazardous substance RQ is released, notification must also be given to the National Response Center in Washington, D.C. (RQs are listed in 40 CFR Part 302, Table 302.4). These notifications are in addition to notifications given to the local emergency response team or fire personnel.*

§311: *Requires that either material safety data sheets (MSDSs) for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and local fire department.*

Toxic Substances Control Act, Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. As the Project would generate small amounts of hazardous waste during construction, operation, maintenance, and decommissioning, RCRA regulations would be applicable to the Project.

Occupational Safety

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. At sites known or suspected to have soil or groundwater contamination, construction workers must receive training in hazardous materials operations and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers, such as those workers hired to construct and maintain the Project as well as the general public from exposure to potential hazards at the contaminated site.

North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation Standards (NERC) is a nonprofit corporation comprising 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North America. To achieve its goal, NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel (NERC 2020). To improve the reliability of regional electric transmission systems and in response to the massive widespread power outage that occurred on the Eastern Seaboard, NERC developed a transmission vegetation management program that applies to all transmission lines operated at 200 kV and above to lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region.

The plan, which became effective on April 7, 2006, establishes requirements of the formal transmission vegetation management program, which include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be no less than those set forth in the IEEE Standard 516-2003 (*Guide for Maintenance Methods on Energized Power Lines*) (IEEE 2003), which establishes minimum vegetation-to-conductor clearances to maintain electrical integrity of the electrical system. As the Project would construct an up to 0.2-mile long 230 kV gen-tie line extension between the Project substation and the existing 230 kV gen-tie line to reach the point of interconnection at PG&E's existing Tranquillity Switching Station, NERC standards would be applicable.

State

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program, Health & Safety Code §25404 et seq.) The program has six elements: hazardous waste generators and hazardous waste on-site 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. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. In the County of Fresno, the Fresno County Division of Environmental Health is the designated CUPA for all businesses (Fresno 2021).

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law (Business Plan Act, Health and Safety Code §25500 et seq.) requires any business that handles hazardous materials at or above specified thresholds to prepare a hazardous materials business plan (HMBP). The HMBP much include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on-site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

The primary purpose of HMBP requirement is to provide basic information needed by first responders to prevent or mitigate damage to the public health and safety and to the environment from a release or threatened release of a hazardous material (Cal OES 2014). The HMBP requirement could apply, for example, to the handling of mineral oil, which is a highly-refined hydrocarbon-based oil used as an insulation medium and coolant in transformers and other electrical equipment.

Hazardous Waste Handling

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, if such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations 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 wastes that cannot be disposed of in landfills. These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. The California Hazardous Waste Control Law is codified at Health and Safety Code §25100 et seq.

Occupational Safety

The California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that safety data sheets (SDSs) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

Utility Notification Requirements

California Government Code Section 4216 et seq. requires owners and operators of underground utilities to become members of, participate in, and share the costs of a regional notification center. Underground Service Alert North (USA North) is the notification center for the Project area. USA North receives planned excavation reports and transmits the information to all participating members that may have underground facilities at the location of excavation. (USA North 2018).

Other State Regulations

The California Code of Regulations contains additional requirements that would govern aspects of the Project, including:

1. 8 Cal. Code Regs. §2700 et seq., High Voltage Electrical Safety Orders, which establish essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger.
2. 14 Cal. Code Regs. §§1250-1258, Fire Prevention Standards for Electric Utilities, which provide specific exemptions from electric pole and tower firebreak and electric conductor clearance standards, and specifies when and where standards apply. It establishes minimum clearance requirements for flammable vegetation and materials surrounding structures.
3. 22 Cal. Code Regs. §66273, Standards for Universal Waste Management, which regulate the management of universal wastes. These wastes are not fully regulated as hazardous waste to encourage their recycling. Batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes and tube glass, and aerosol cans are considered universal wastes in California. A person or business that generates universal waste is required to follow the Management Requirements for Universal Waste Handlers (22 Cal Code Regs. §§66273.30-66273.39), which include storage, spill protection, and disposal rules designed to minimize risk of harm to public health and the environment.

NPDES Construction General Permit

The Regional Water Quality Control Board (RWQCB) administers the stormwater permitting program in the Central Valley Region pursuant to authority delegated under the federal Clean Water Act's National Pollutant Discharge Elimination System (NPDES) program. Construction activities disturbing 1 acre or more of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit) and must apply for Construction General Permit coverage if they will discharge into waters of the United States. Additional details of the Construction General Permit are provided in Section 4.11, *Hydrology and Water Quality*.

California Fire Code

The California Fire Code is contained within Title 24, Chapter 9 of the California Code of Regulations. Based on the International Fire Code, the California Fire Code is created by the California Buildings Standards Commission. It regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the California Fire Code and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to incorporate to protect life and property. Section 608 of the International Fire Code (IFC) has been adopted by the State of California and Fresno County to minimize risk of fire from stationary battery storage systems and to contain fire in the event of such an incident. Compliance with Article 480 of the Electrical Code, which identifies insulation and venting requirements for stationary storage batteries, further reduces potential fire risk.

Additional details about SRAs and Project-related wildfire considerations are presented in Section 4.20, *Wildfire*.

Health and Safety Code §41700

This statute states, "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."

Emergency Response

The California Governor's Office of Emergency Services (Cal OES) developed the State of California Emergency Plan (Cal OES 2017) to coordinate federal, state, local, and private agency emergency service providers' response to natural or human-caused emergencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies.

State Responsibility Area

In designated State Responsibility Areas, the State is financially responsible for the suppression and prevention of wildfires (Pub. Res. Code §4102.). Its designated State Responsibility Areas consists of more than 31 million acres, including the Fresno-Kings County Unit. The Fresno County Fire Hazard Severity Zone Map identifies the Project site and the surrounding area as an unincorporated Local Responsibility Area (CAL FIRE 2007). There are no Very High Fire Hazard Severity Zones in the Local Responsibility Area in Fresno County (CAL FIRE 2008). See Section 4.20, *Wildfire*, for additional details.

Local

Fresno County 2000 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 hazards, airport hazards, hazardous materials, and noise. The following list consists of the policies of the Health and Safety Element relevant to Hazards and Hazardous Materials:

> ***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, alternative fire protection measures, including sprinkler systems, shall be identified and may be incorporated into development if approved by the appropriate fire protection agency.

Goal HS-F: 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.

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.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 Office of Emergency Services Operational Area Master Emergency Services Plan

In 1995, the Fresno County Board of Supervisors adopted California's Standardized Emergency Management System, established the geographic area of the County of Fresno as the Fresno County Operational Area, and designated Fresno County as the Operational Area Lead Agency (Fresno County 2020). Fresno County Office of Emergency Services (Fresno OES) coordinates the development and maintenance of the Fresno County Operational Area Master Emergency Services Plan (Fresno County OAMESP). This Plan serves as a guide for the County's response to emergencies/disasters in the unincorporated areas of the County (Fresno 2017a). Emergency facilities in the County are identified in this plan. The Emergency Operations Center is located in downtown Fresno, approximately 32 miles east of the Project site. Public junior high and high schools throughout the County are identified as the primary resource for public shelters during disasters. For large, evacuated populations in locations where junior high and high schools are not available, public elementary schools, County fairgrounds, community centers, auditoriums, armories, churches, and some commercial and industrial buildings are also possible shelter sites (Fresno 2017a).

4.10.2 Significance Criteria

The Project would result in significant impacts to hazards and hazardous materials if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b) 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;

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter (0.25) mile of an existing or proposed school;

d) 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;

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two (2) 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;

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;

The environmental checklist included in CEQA Guidelines Appendix G further suggests that a project would result in significant impacts to hazards and hazardous materials if it would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Potential impacts relating to Wildfire are addressed in Section 4.20.

4.10.3 Direct and Indirect Effects

4.10.3.1 Methodology

This impact analysis focuses on potential effects of the Project and alternatives related to Hazards and Hazardous Materials. The analysis is based on an assessment of existing conditions at the Project site, a review of relevant environmental databases and the Phase I Environmental Site Assessment prepared for the Project site, applicable regulations and guidelines, and the requirements of the Project site clearing, construction, operation and maintenance, and decommissioning and site reclamation. Impacts related to the potential release of toxic air emissions are discussed in Section 4. 4*, Air Quality*. Impacts related to wildfire are analyzed in Section 4. 20*, Wildfire*.

4.10.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact for criteria a) and b) and no impact for criteria c), d), e), and f). The impact conclusions for that subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Impact 4.10.1: The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (*Less than Significant Impact*)

Construction

Project construction would last approximately 14 months, with activities including grading, site preparation, installation of PV modules and racking system, electrical equipment, construction of the substation, and installation of overhead, aboveground, or underground cables between the Project substation and the existing 230 kV gen-tie line to reach the point of interconnection at PG&E's existing Tranquillity Switching Station. The Project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials

Transport Uniform Safety Act. Most of the waste generated during construction would be non-hazardous, and consist primarily of cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools.

Most construction waste would be disposed of at a non-hazardous landfill or at a recycling facility whenever feasible. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site and collected as needed by a commercial service and delivered to a permitted landfill. Construction would generate an average of approximately 20 cubic yards of non-hazardous solid waste per week over the period of construction. Sanitary waste would be managed using portable toilets and hauled for off-site disposal.

During construction of the Project, diesel and gasoline fuels, herbicides and other hazardous materials such as oils, and hydraulic fluids commonly associated with construction equipment may be stored on-site. All hazardous materials would be used, stored and disposed of in a manner to prevent accidental release, in accordance with manufacturers' specifications, and consistent with regulatory requirements and best management practices. For example, the Project would implement best management practices to limit runoff and control erosion during construction, as required, and in compliance with the terms stipulated by the stormwater pollution prevention plan (SWPPP) and associated conditions of the Construction General Permit or, in the absence of a nexus with waters of the United States, a plan that incorporates substantively similar stormwater best management practices (BMPs) to reduce the adverse effects of erosion and sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation. See Section 2.5.8.1, *Erosion Control and Water Quality*, in the Project Description, which describes these Applicant-proposed commitments. In addition, safety data sheets for all applicable materials present at the Project site would be made readily available to on-site personnel.

Selenium is assumed for purposes of this analysis to be present in on-site soils, which, when disturbed through site preparation and construction, could create exposure risks via the inhalation of dust. Although selenium is a naturally occurring substance and an essential nutrient for humans and animals, high levels of exposure to selenium through inhalation or ingestion can cause clinical signs of toxicity or circulation problems (USEPA 2014). Selenium concentrations for soils at neighboring parcels average 1 milligram per kilogram (mg/kg), which is considered "moderately elevated" relative to the common range (0.1-1.4 mg/kg) for Western U.S. and San Joaquin Valley soils (USDOI 2005). Project construction, however, would comply with all applicable San Joaquin Valley Air Pollution Control District rules and regulations, including Regulation VIII (Fugitive Dust Rules), which would minimize dust levels and further reduce impacts from fugitive dust that may contain selenium to a less-than-significant level. See Section 4.4, *Air Quality*, for additional details. The most common intake of selenium is through the ingestion of food products with a high buildup of selenium levels. According to the Agency for Toxic Substances and Disease Registry (ATSDR), "No human populations in the United States have been reported with long-term selenium poisoning, including populations in the

western part of the country where selenium levels are naturally high in the soil" (ATSDR 2003). Furthermore, selenium is not classified as a human carcinogen (USEPA 1992). Therefore, no health or carcinogenic effects would be anticipated with respect to selenium content in on-site soils.

With these protections in place and through compliance with existing, independently enforceable regulations, Project construction would result in a less-than-significant impact relating to the creation of a potential significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Operation and Maintenance

Project operation and maintenance (O&M) activities would involve the transportation, use, or temporary storage of a variety of hazardous materials, such as batteries, insulation fluid, grease, diesel fuel and gasoline, solvents, and other cleaning products. The Project substation would include a control building, transformers, breakers, switches, batteries, and other electrical equipment. In addition, an emergency generator would be located at the substation for use if the regional transmission system fails. The generator would be powered by diesel and would include secondary containment safety measures in accordance with regulatory requirements.

As described in Section 2.5.4., *Hazardous Waste and Hazardous Materials*, O&M activities for the solar facility would require limited quantities of hazardous materials. Most O&M activities would take place in the O&M building. Any hazardous materials that would be stored on-site would be contained in designated areas in accordance with a HMBP, if the state thresholds for HMBP preparation are exceeded. Adherence to the HMBP as required by the California Hazardous Materials Release Response Plans and Inventory law (Health and Safety Code §25500 et seq.) would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to workers or the public. PV panel cleaning would not require hazardous materials to remove dust but would use water. The site would be secured with a barbed wire chain-link fence to prevent public access to any hazardous materials that may be stored on the Project site.

O&M activities generally would be limited to performing visual inspections, monitoring plant performance, executing minor repairs, and responding to plant adjustment. The proposed solar facility would include a comprehensive supervisory control and data acquisition system to allow remote monitoring of facility operation and/or remote control of critical components. Therefore, repairs or replacement of equipment, and other specialized maintenance, would occur intermittently. Repair and maintenance activities may involve the transportation, use, or temporary storage of a variety of hazardous materials such as batteries, insulating fluid, diesel fuel and gasoline, solvents, and cleaning products. However, due to the largely self-operating nature of the facility, such actions would occur infrequently.

O&M vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and panel washing. Large or heavy equipment is not expected to be used during normal operation. However, large or heavy equipment may be brought to the facility infrequently for equipment repair or replacement. Long-term maintenance and equipment replacement would

be scheduled in accordance with manufacturers' recommendations to ensure equipment integrity is maintained. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter equipment would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary. Pre-emergent herbicides, if used during operation to control vegetation, may be transported to and used on the Project site. These materials would be stored in appropriate containers and managed in accordance with the HMBP to prevent their accidental release at the site. Therefore, impacts related to operation would be less than significant.

During O&M activities, the Project would generate a small amount of waste, such as broken or rusted metal, defective or malfunctioning equipment, electrical materials, empty containers, other miscellaneous solid waste, and typical refuse from the O&M staff. This analysis assumes consistent with other similar projects that this Project would generate approximately 1 cubic yard of waste per week that would be accumulated in an on-site dumpster for weekly collection by a commercial waste management service.

The PV modules that would be installed on the Project site could include CdTe thin film technology. CdTe is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material and then encapsulating it in a second glass sheet. Commercial PV modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. Therefore, the PV modules that would be used on the Project site would have been determined to conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third-party testing laboratory certified by the IEC (Solar ABCs 2020). The PV modules also would conform to Underwriters Laboratory (UL) 1703, a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules would undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and to monitor their performance (Solar ABCs 2020). Studies indicate that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil (Fthenakis 2020). These studies have consistently concluded that during accidents such as fires, no emissions from CdTe PV modules would be released because cadmium would dissolve into molten glass. The Project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections. CdTe PV modules have proven to pass the Federal TCLP leaching criteria for non-hazardous waste allowing the modules to be disposed of in landfills or recycled as practical in compliance with applicable laws and regulations (Fthenakis 2020).

Herbicides and pesticides may be used during operation as part of pest control management. The implementation of a Weed Control Plan (Appendix B-2) and a Rodent Control Plan (Appendix B-3) would be implemented as part of the Project as required by the Fresno County Solar Guidelines (Fresno County 2017b). Herbicides can drift with wind or run off into streams during rain. If not handled appropriately, use and disposal of herbicides would threaten the health of people or the environment via contamination of surface and groundwater. The Project could use County-approved pre-and/or post-emergent herbicides for weed management, as described in the Weed Control Plan. Pesticides may be applied if rodent populations exceed an acceptable level. Priority

would be given to the pesticides with the lowest toxicity taking into consideration the method and frequency of application and the risk of exposure to building occupants and non-target species. In addition, the use of herbicides and or pesticides on the Project site would comply with U.S. EPA and California Department of Pesticide Regulation requirements. Implementation of the recommendations in the Weed Control Plan and compliance with relevant federal, state, and local herbicide regulations would reduce the potential impacts associated with herbicide use to a less than significant level.

As part of the battery energy storage system (BESS), lithium ion batteries could be used at the site and would either be contained in temperature-controlled facilities located at the Project substation central to the Project site, or with inverters DC coupled to solar panels within steel enclosures distributed throughout the solar facility. Transformers would contain dielectric insulating fluid in the form of vegetable or mineral oil and would not be routinely handled by O&M staff. Tracker motors and drive supports could require periodic application of synthetic industrial grease at the interface of moving parts. Herbicides and or pesticides may be transported to the Project site if they are used during operations to control vegetation. Cleaning products typical of office spaces also may be used in the O&M building. These materials would be stored in appropriate containers to prevent accidental release. Depending on the formulation, grease is considered hazardous by the Occupational Safety and Health Administration (OSHA). Equipment containing hazardous materials would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of heating, ventilation, air conditioning, fire protection systems, and spill response supplies. A SPCC Plan would be developed for the Project, if needed, in accordance with all applicable federal, state, and local regulations: as the Project would require the use of heavy equipment containing petroleum products (e.g., diesel, gasoline, and motor oil) during construction, operation, maintenance, and decommissioning, and diesel fuel and gasoline may be stored on-site for refueling the equipment, an SPCC Plan may be required and be applicable to the Project. If an SPCC Plan is not required by regulation, the Project would prepare and adhere to a substantively similar plan. See Section 2.8, *Erosion Control and Water Quality*, in the Project Description, which describes this Applicant-proposed commitment. The preparation and implementation of an HMBP that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would further reduce impacts related to hazards to a less-than-significant level.

Decommissioning and Site Reclamation

The Project site would be decommissioned, reclaimed, and restored as described in Section 2.5.7, *Decommissioning and Site Reclamation*, and in accordance with a County-approved Reclamation Plan, a draft of which is provided as Appendix B-1, *Project Decommissioning and Reclamation Plan*. Reclamation would consist of the removal of above-ground structures, including foundations and infrastructure, majority of below ground structures, and overall restoration of the Project site. Above-ground structures including PV modules, racking systems, batteries and enclosures would be dismantled and either resold, recycled, or disposed of in a manner consistent with applicable regulations. Electrical systems and electric lines external to the site would be de-energized, placed in appropriate containers, and secured in a truck transport trailer for salvaging.

All remaining oil and lubricants removed from equipment and any remaining fuel would be transferred to an appropriate container and disposed of in accordance with the manufacturers' specifications and consistent with applicable regulatory requirements.

Following removal of above-ground equipment and structures, sub-surface structures would be decommissioned. The majority of underground electrical equipment and piles used to support solar racking would be extracted and disposed of off-site. Conduit and electrical lines installed more than 3 feet below ground would be abandoned in place. Any copper or aluminum wire would be salvaged or recycled.

Project roads, access roads and parking areas, unless retained for other purposes following decommissioning, would be removed. Heavy duty equipment, such as a wheel loader, would be used to remove the granular (or graveled) road base then the debris would be loaded into a dump truck for disposal at an approved recycling or disposal facility. If necessary, fresh topsoil may be imported to the reclamation site by truck and distributed over the area before being levelled to match the existing (pre-Project) grade (Appendix B1). Revegetation would consist of distribution of a mix of rangeland seed across the site or sown into the soil as specified by local authorities at the time of decommissioning.

The area would be thoroughly cleared and all debris removed. PV panels would likely be collected and recycled; however, even if they are disposed of in a landfill, the CdTe they contain would not cause a significant impact relating to hazards or hazardous materials because current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Therefore, Project decommissioning and site restoration would cause a less-than-significant impact related to the routine transport, storage, and disposal of hazardous materials.

Mitigation: None required.

Criterion b) Whether the Project would 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.

Impact 4.10-2: The Project would not 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. (*Less than Significant Impact*)

Construction

Potential impacts that may result from upset or accidents during grading, site preparation, and construction of the Project include the accidental release of materials, such as hydraulic fluids, fuels, lubricants, herbicides and/or pesticides, and other hazardous materials such as oils and grease. Generally, the quantities of these hazardous materials would be relatively limited and handled in accordance with manufacturer's guidelines. In addition, implementation of the BMPs

required by the NPDES Construction General Permit as well as the SPCC Plan, if needed, would include containment and spill response measures that would reduce the potential impact from upset and accident conditions to a less-than-significant level. As noted above, the Project would implement BMPs to limit runoff and control erosion during construction, as required, and in compliance with the terms stipulated by the SWPPP and associated conditions of the Construction General Permit or, in the absence of a nexus with waters of the United States, a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation.

The Phase I Environmental Site Assessment identified two utility lines intersecting the central portions of the Project site and three groundwater wells on the Project site. Any undocumented subsurface utilities or structures that might be encountered and damaged could result in a release of a hazardous material. Additionally, undocumented subsurface utilities could be encountered during construction of the transmission line extension from the Project substation to the existing gen-tie line or during interconnection to the PG&E-owned Tranquillity Switching Station located to the southwest of the Project site. The potential for such incidents would be reduced by thoroughly screening for subsurface structures in areas prior to commencement of any subsurface work, as required under Government Code Section 4216 and described in detail in Section 4.19, *Utilities and Service Systems*.

Despite the relatively open spaces surrounding the site, workers and nearby sensitive receptors could be exposed to hazardous materials used during construction of the Project, resulting in adverse health risks in the event of upset or accident conditions involving hazardous materials used on-site, including herbicides and/or pesticides. Application of pre-emergent herbicides and pesticides would be in accordance with federal, state, and County regulations (including Cal/OSHA requirements) and would be applied by a state-licensed applicator. In addition, as above, spill response and containment measures required by the NPDES General Construction Permit would limit the potential for any substantive inadvertent releases. Therefore, risk of upset and accident conditions would be minimized and the impacts would be less than significant.

Operation and Maintenance

Operation and maintenance of the solar facility would generate little hazardous waste. Electrical equipment used by the Project, such as inverters and each enclosed transformer at the substation would include an insulating fluid such as vegetable or mineral oil, but upsets or accidents would be controlled via the secondary containment provided in accordance with applicable federal, state, and local laws and regulations. The insulating oil contained in each transformer does not normally require replacement, minimizing the potential for upsets or accidents involving its use. Further, Health and Safety Code Section 25500 et seq. requires the preparation of hazardous materials release response plans such as a HMBP under specified circumstances.

Hazardous materials are unlikely to be released during any accidental breakage of the PV panels (Fthenakis 2003). Based on warranty return data, the breakage rate of CdTe PV modules is one percent over 25 years, which translates to an average of 0.04 percent per year (Sinha et al. 2012). This breakage rate is an overestimate because over one-third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation are removed from the construction site and returned to a manufacturing facility for recycling. Similarly, fire damage would not result in the release of hazardous materials because at typical flame temperatures, the CdTe compounds were not found to vaporize but instead Cd would dissolve into the molten glass (Fthenakis 2003). CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,800˚F. Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below human health screening levels (Sinha et al. 2012, Fthenakis 2003).

Hazardous materials that would be present as part of the ESS would be used, stored and contained in compliance with applicable federal, state, and local requirements, which would reduce the potential for a battery-related incident or accident to result in release of hazardous materials into the environment to a less-than-significant level. The ESS would include appropriate ventilation, acid-resistant materials, and spill protection supplies.

Lithium-ion batteries contain metals such as cobalt, nickel, and manganese, which can pollute waterways and ecosystems if released. Off-gassing from a damaged ESS can also be hazardous to human and environmental health. Whether the ESS is lithium-ion or flow battery technology, and whether it is contained within a single climate-controlled enclosure, or distributed upon the solar facility in steel enclosures, the ESS would be designed, constructed, and operated in accordance with applicable industry best practices and regulatory requirements, including, but not limited to, National Fire Protection Association 855 (Standard for the Installation of Stationary Energy Storage Systems) and Section 1207 of the 2022 California Fire Code. These requirements address fire-resistant enclosure materials, spacing of units to prevent spread of fires, and other design best practices. If applicable, the ESS also would be certified to meet the standards of UL 9540 (Standard for Energy Storage Systems and Equipment), which includes criteria to address the fire, explosion, and other safety aspects of the materials, enclosures, controls, piping, utility grid interaction, hazardous moving parts, signage, and instructions involved in a ESS (UL Solutions, 2022). This combination of standards addresses the potential for hazardous conditions and release of hazardous material in the event of a fire or extreme heat hazard, whether externally (e.g., wildfire) or internally (e.g., thermal runaway) ignited, and the prevention and suppression of fires; detection, warning, and communication of hazards; and containment of potentially hazardous materials, including gases, in the event of a fire. With implementation and compliance with these design and safety regulations, toxic substances would not be released into the environment and impacts would be less than significant.

Mineral oil, if used as an insulating material or coolant in any Project-related electrical equipment, would not be routinely handled by O&M staff. Management of vegetation and pests may require the use of herbicides and pesticides that, if not handled properly, could create a hazard to construction workers, maintenance employees, and nearby residents. However, application would be limited, and

in accordance with federal, state, and County regulations, such that herbicides would be applied by a state-licensed pesticide applicator. Adherence to regulatory requirements would reduce any potential impacts related to use of herbicides to a less-than-significant level.

The Project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The closest designated route for the transport of hazardous materials is SR 33, which is located adjacent to the Project site. Adherence to regulations and requirements described in the HMBP and SPCC and measures described in Applicant-submitted plans such as the Weed and Rodent Control Plans (Appendix B), protocols during the storage, transportation, and usage of any hazardous materials would be followed to minimize and avoid the potential for significant impacts during an upset or accident.

Decommissioning and Site Reclamation

The Project decommissioning and site restoration process is summarized under Impact 4.10-1, above. Many components of the solar facility and energy storage system are recyclable. Most panel materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. See Section 4.19, *Utilities and Service Systems*, for information about landfill capacity. The disposal of batteries may be considered hazardous waste when they are discarded and would be disposed of in accordance with the applicable hazardous waste requirements. Solar PV module manufacturers generally provide CdTe module collection and recycling services. Nonetheless, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, presenting a low risk for cadmium leaching if they reached a landfill. Any potential impacts relating to hazardous materials related incidents, upsets, or accidents would be less than significant.

Mitigation: None required.

Criterion c) Whether the Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

The Project is not located within 0.25 mile of an existing or proposed school. The closest schools are Tranquillity High School and Tranquillity Elementary School. Both are located approximately 5.4 miles northeast of the Project site. Under this criterion, there would be no impact. **(*No Impact*)**

Criterion d) Whether the Project would 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.

The Project is not proposed on a site included on a list of hazardous materials sites pursuant to Government Code Section 65962.5. According to the Phase I Environmental Site Assessment prepared for the Project site (Appendix H and a recent review of publicly available environmental databases, the Project site is not listed as a hazardous materials site (SWRCB 2021; DTSC 2021). As a result, the Project would cause no impact regarding this criterion. **(*No Impact*)**

Criterion e) Whether the Project would be 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.

The Project site is not located within an area land use plan. The nearest private airport (the San Joaquin Airport) is located approximately 7 miles away. Therefore, the Project is not part of any airport land use plan and would not interfere with airport operations or result in a safety hazard for people residing or working in the area. **(*No Impact*)**

Criterion f) Whether the Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The Project would not impair implementation of or physically interfere with the Fresno County Operational Area Master Emergency Service Plan coordinated by the Fresno County Office of Emergency Services. The Project site is located in a sparsely-populated rural area of the County. The Project would not alter or impair any of the existing road networks and would require relatively low staffing for operation and maintenance activities. As a result, the Project would not impair implementation of or physically interfere with any adopted emergency response plan or emergency evacuation plan. **(*No Impact*)**

PG&E Infrastructure

To interconnect the Project with the electrical grid, PG&E would extend an existing 230 kV gen-tie line by up to 0.2-mile to connect with the Project's proposed substation. The gen-tie line extension would not emit hazardous materials within 0.25 mile of a school, would not be located on a site known to be contaminated, and would not create aviation hazards. The gen-tie line would not use hazardous materials or generate hazardous waste beyond what has been described in the impact analysis of the Solar Facility. Hazards discussed and impact conclusions reached above would be the same as for the Project as a whole. The combined impacts of the Project and PG&E infrastructure would be less than significant.

4.10.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Compared to the Project, Alternative 1 would utilize a smaller total acreage. However, Alternative 1, the Reduced Acreage Alternative would consist of comparable site uses, posing the same impacts with respect to hazards and hazardous materials. As with the Project, Alternative 1 would not require the routine use of hazardous materials and would not generate a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. With adherence to existing regulatory controls and implementation of measures in applicant-submitted plans such as the HMBP, SPCC and the Weed and Rodent Control Plans (Appendix B-2, B-3), impacts would be less than significant.

As with the Project, existing regulations governing the use, transport, and disposal of hazardous materials would apply to Alternative 1, the Reduced Acreage Alternative. Alternative 1 would be constructed, operated, maintained, and decommissioned in a subset of the same parcels as the Project. Therefore, there would be no impact with respect to existing waste sites, hazards near schools, nor conflicts with an airport land use plan or emergency response,

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar energy generating, battery storage, transmission line, or related facilities would be delivered to the Project site or constructed, operated, maintained, or decommissioned there. None of the materials identified in Section 2.5.4.4, *Hazardous Waste and Hazardous Materials*, would be delivered to, stored or used on, or removed from the Project site. No equipment or vehicle emissions would be generated for solar energy or battery storage purposes on the site. Instead, the Project site would continue to be used for dry-farmed agriculture and/or left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Hazards and Hazardous Materials.

4.10.4 Cumulative Analysis

As described in Section 4.1.3, *Cumulative Effects Approach*, multiple projects, primarily utility-scale solar projects, exist or are proposed within a 15-mile radius of the Project site. The geographic scope of impacts associated with hazardous materials generally encompasses the Project site, a 0.25-mile radius area around the Project site and the roadways that could be used to transport hazardous materials for the Project use. A 0.25-mile-radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Hazards and exposure risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to isolated events and on-site existing hazardous conditions and/or hazards caused by the project's construction or operation. A geographic scope of a 0.25-mile-radius also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact upon an existing or proposed school, as discussed above.

As discussed above in Section 4.10.3, there would be no impact with respect to hazardous emissions or handling of hazardous substances or acutely hazardous materials, substances, or waste within

0.25 mile of an existing or proposed school; no impact related to the location of the Project on a listed hazardous materials site; no impact related to airport-related hazards; and no impact related to impairment of the implementation of a physical interference with an adopted emergency response plan or emergency evacuation plan. Therefore, neither the Project nor an alternative would cause or contribute to any cumulative effect regarding any of these criteria.

Two projects are identified as part of the cumulative scenario (Table 4.1-1, *Cumulative Projects List*) within 0.25 mile of the Project site that could cause impacts that might combine with those of the Project: The Scarlet Solar Energy Project is adjacent to and directly south of the Project and the approved Luna Valley Solar Project is located adjacent to and directly west of the Project site. Additionally, the Heartland Hydrogen Project (in the planning stage) would be located adjacent to the northern Project site boundary. As explained in Section 4.10.1.2, *Environmental Setting*, there is no indication of an existing significant cumulative effect relating to Hazards and Hazardous Materials in the study area.

Grading, preparation, and construction, operation, maintenance, and decommissioning and site remediation of the Project or the Alternatives, in combination with the incremental impacts of other projects in the cumulative scenario would not cause or contribute to any significant cumulative impacts relating to Hazards and Hazardous Materials. As analyzed above, the Project and Reduced Acreage Alternative would result in less than significant impacts related to the potential to encounter hazardous materials, accident or upset conditions during the routine use of hazardous materials, or release hazardous materials into the environment that could cause harmful exposures. Releases of hazardous materials or wastes are considered site-specific and generally do not cumulatively contribute with other cumulative projects because of the relatively low quantities used and stored at PV solar projects and the nature and characteristics of the emissions. An incident or accident involving a hazardous material release during project construction or operation including from site grading or the use and transport of batteries, insulating fluids, grease, solvents, herbicides, pesticides, and fuel to and from the Project site are often location-specific and limited in geographic scope. In general, accidental releases and upset conditions tend to be localized events that do not combine with other projects because of the randomized and infrequent nature of occurrences, and because compliance with applicable laws and regulations governing the transport, storage and use of hazardous materials would assure that any accidental releases would be prevented or contained promptly. Therefore, the Project's incremental, less-than-significant impact would not combine with the incremental impacts of other projects in the cumulative scenario to cause a significant cumulative impact from accidental releases or discovery of hazardous materials and/or wastes.

Hazardous materials to be used during decommissioning and removal activities are of low toxicity and would consist of insulating fluids, grease, solvents, and fuels. Because these materials are required for operation of construction vehicles and equipment, BMPs would be implemented to reduce the potential for or exposure to accidental spills involving the use of hazardous materials similar to what would be required of other cumulative projects. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur in accordance with construction requirements that all cumulative projects adhere to. While foreseeable projects have the potential to cause similar impacts, these projects would be required

to comply with applicable regulatory requirements, and it is assumed these projects would also implement similar BMPs and spill prevention and containment measures.

In addition, conformance with existing state and County regulations and implementation of appropriate safety measures during construction of the Project, as well as other cumulative projects, would further reduce the impact to a level that would not cause or contribute to any significant cumulative effect.

4.10.5 References

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4.11 Hydrology and Water Quality

This section identifies and evaluates issues related to hydrology and water quality in the context of the Project and alternatives. It describes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

This analysis is based in part on the water supply assessment prepared for the Project as updated in 2023(Appendix C). The preparers of this Draft EIR independently reviewed this and other materials prepared by or on behalf of the Applicants and determined them to be suitable for reliance on (in combination with other materials included in the formal record) in the preparation of this Draft EIR. No comments pertaining to hydrology and water quality were received during the scoping period (Appendix A, *Scoping Report*).

4.11.1 Setting

4.11.1.1 Environmental Setting

Regional Setting and Climate

The Project site is located in the San Joaquin Valley, bounded by the Sacramento-San Joaquin Delta to the north, the Sierra Nevada mountain range and the Temblor Range to the east, the Tehachapi Mountains to the south, and the Tumey and Panoche Hills (part of the Coast Ranges) to the west (Appendix C; USGS 2021). The Project site is within the Tulare Lake Hydrologic Region, which encompasses Kings, Tulare, Fresno, and Kern counties and is internally drained by the Kings, Kaweah, Tule, and Kern Rivers (DWR 2006). Between 1946 and 2016, average annual precipitation in the Project vicinity was 8 inches (WRCC 2021).

Surface Water Hydrology

The Project site is located within flat agricultural terrain of the Central Valley with an overall grade of less than 1 percent. Surface water resources in the vicinity are generally limited by the arid climate and consist primarily of intermittent streams originating from the Coast Ranges and agricultural irrigation ditches. Ephemeral or perennial streams are not present on the Project site. The nearest surface waters are ephemeral and drain the Panoche and Tumey Hills approximately 7 miles to the west. Continuous flow measurements are only recorded at Panoche, Cantua, and Los Gatos Creeks; the remaining creeks either are not gaged or are only measured for peak flows (Westlands Water District [WWD] 2020). Normally all native surface water in the vicinity (not lost through consumptive use, evapotranspiration, or evaporation) percolates into the groundwater (CVRWQCB 2018).

The Project site drainage flows from west to east as sheet flow. During larger storm events stormwater flows across the land, then through a series of drainage ditches along West Adams Avenue, and into the San Luis Drain. High flow events could potentially enter canal ditches along San Mateo Avenue approximately 1.5 miles east of the Project site, and ultimately discharges to the Fresno Slough, approximately 5 miles northeast of the Project site. Fresno Slough is listed on

the Clean Water Act Section 303(d) list as impaired for various water quality contaminants associated with agricultural activities (e.g., fertilizers, insecticides, herbicides). Water quality impairments associated with higher concentrations of salts and suspended solids also are listed.

Groundwater

The Project site is within the Westside Subbasin of the San Joaquin Valley Groundwater Basin. The Westside Subbasin includes approximately 1,000 square miles of Fresno and Kern counties and is comprised primarily of Quaternary and Tertiary-aged unconsolidated sediments (Appendix C). The upper and lower water bearing zones of the Subbasin are recharged by natural surface water, applied agriculture irrigation water, and subsurface inflow. The primary source of recharge is from infiltration of surface water from streams located along the eastern front of the Coast Ranges and from deep percolation of agricultural irrigation water. Municipal and irrigation groundwater well yields within the Westside Subbasin average 1,100 gallons per minute (gpm) and range from 560 gpm to 2,000 gpm (Appendix C; DWR 2006).

The Westside Subbasin is one of 21 basins that have been identified as being in a state of critical overdraft (Appendix C; DWR 2016), and the Westside Subbasin is listed as a high-priority basin (Appendix C; DWR 2018). WWD, in its role as the Groundwater Sustainability Agency (GSA) for the Westside Subbasin, prepared and adopted a Groundwater Sustainability Plan (GSP). A discussion of the regulatory context of the Sustainable Groundwater Management Act is provided in Section 4.11.1.2.

Due to water management practices in the Tulare Lake region, elevated salt and nitrate concentrations impair or threaten to impair the region's water and soil quality which, in turn, adversely affects beneficial uses of groundwater in the basin (CV-SALTS 2016). Water imported from the Sacramento-San Joaquin Delta to irrigate agricultural lands brings an average of 250 tons of salts (or total dissolved solids) per day into the San Joaquin Valley via the water canal. As pumped groundwater is applied to land, water is lost to evapotranspiration, further increasing the concentration of salts in the soil (Pauloo, et al. 2020). As discussed in Chapter 2, the Project site cannot legally be irrigated due to elevated salt concentrations.

Within the Westside Subbasin the average total dissolved solids (TDS) concentration in groundwater is about 520 milligrams per liter (mg/L) but can exceed 10,000 mg/L with one sample reporting 35,000 mg/L (DWR 2006; Appendix C). Elevated TDS is a groundwater impairment within the Westside Subbasin, and groundwater in some areas may also contain elevated levels of selenium and boron (DWR 2006; Appendix C).

Data from onsite groundwater wells at the western portion of the Project site indicate depths to shallow groundwater ranging from 82 to 86 feet below ground surface (bgs).

Flooding

The Federal Emergency Management Agency (FEMA) is responsible for mapping areas subject to flooding during a 100-year flood event (i.e., 1 percent chance of occurring in a given year).

According to the FEMA Flood Insurance Rate Map (FIRM), the Project site does not lie within a 100-year flood zone or any other special flood hazard zone (FEMA 2009).

Dam Inundation Zones

According to the Fresno County Multi-Jurisdictional Hazard Mitigation Plan, the Project site is not located within a dam inundation zone (County of Fresno 2018).

4.11.1.2 Regulatory Setting

Federal

Federal Clean Water Act

The Clean Water Act of 1977 is implemented by the U.S. Environmental Protection Agency (USEPA) to restore and maintain the chemical, physical, and biological integrity to the nation's waters by implementing water quality regulations. The Clean Water Act provides the legal framework for various water quality regulations including the National Pollutant Discharge and Elimination System (NPDES), water quality standards, anti-degradation policy, non-point source discharge programs, and wetlands protection, among others. The USEPA has delegated responsibility for implementation of portions of the Clean Water Act, including water quality control planning and programs in California, to the State Water Resources Control Board (state board) and the nine regional boards. Water quality standards applicable on and near the Project site are listed in the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan), as discussed below.

National Pollutant Discharge Elimination System (NPDES) Permit

The NPDES permit system was established in the CWA to regulate municipal and industrial point discharges to surface waters of the U.S. Each NPDES permit for point discharges contains limits on allowable concentrations of pollutants contained in discharges. Section 402 of the CWA contain general requirements regarding NPDES permits.

The CWA was amended in 1987 to require NPDES permits for non-point source (i.e., stormwater) pollutants in discharges. Stormwater sources are diffuse and originate over a wide area rather than from a definable point. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of structural and non-structural Best Management Practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts results when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures, and structural measures (filter strips, grass swales and detention ponds). The NPDES permits that apply to activities in San Mateo County are described under State and local regulations.

National Pollutant Discharge Elimination System (NPDES) Program Clean Water Act §402

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402[p]). The USEPA has granted the SWRCB primacy in administering and enforcing the provisions of CWA and NPDES through the local RWQCBs. NPDES is the primary federal program that regulates point-source and non-point-source discharges to waters of the United States. The Central Valley Regional Water Quality Control Board (RWQCB) administers the NPDES program in Fresno County, as discussed further below in Regional and Local Regulations.

Federal Emergency Management Agency National Flood Insurance Program

Under Executive Order 11988, FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1 percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA's overall mission is to support citizens and first responders to ensure that the United States builds, sustains, and improves capabilities to prepare for, protect against, respond to, recover from, and mitigate all hazards. Regarding flooding, the FEMA provides information, guidance, and regulation associated with flood prevention, mitigation, and response. Under Executive Order 11988, FEMA requires that local governments covered by the federal flood insurance program pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. Through its Flood Insurance and Mitigation Administration, FEMA manages the National Flood Insurance Program, which includes flood insurance, floodplain management, and flood hazard mapping functions. FEMA determines flood elevations and floodplain boundaries and distributes the flood insurance rate maps used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including 100-year floodplains (i.e., areas that would have a 1 percent annual chance of flooding).

Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations. Those regulations enable FEMA to require municipalities participating in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains. The Project site is not located in a floodway or in an identified flood hazard area (FEMA 2009).

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides for protection of the quality of waters of the State of California for use and enjoyment by the people of California. The act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the state are increasingly influenced by inter-basin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the state. The statewide program for water quality control

therefore is administered most effectively on a local level with statewide oversight. Within this framework, the act establishes the authority of the state board and the nine regional boards. The state board administers water rights, sets state policy for water pollution control, and implements various water quality functions throughout the state, while the regional boards conduct planning, permitting, and most enforcement activities. The Project is proposed in a location under the jurisdiction of the Central Valley RWQCB. The Central Valley RWQCB prepares and periodically updates the Basin Plan. Pursuant to the Clean Water Act NPDES program, the Porter-Cologne Act also delegates the authority to the RWQCBs to issue NPDES permits.

Tulare Lake Basin Plan – Beneficial Uses and Water Quality Objectives

The Project site is located within the jurisdiction of the Central Valley RWQCB, which is tasked with implementing the adopted Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin through planning, permitting, and enforcement of established water quality objectives. In accordance with State Policy for Water Quality Control, the Central Valley RWQCB employs a range of beneficial use designations for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives, discharge conditions, and prohibitions (see **Table 4.11-1**). The Basin Plan has identified existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdictional planning area. The existing beneficial uses designated in the Basin Plan for surface and groundwater in the study area, defined as the area of influence within the Westside Groundwater Basin, include: agricultural, industrial process water, and municipal uses. Multiple other beneficial uses are designated for water bodies in the surrounding area, as shown in Table 4.11-1 (RWQCB, 2018).

TABLE 4.11-1
BENEFICIAL USES OF WATER BODIES AT THE PROJECT SITE AND SURROUNDING AREAS

Water Body	Existing Beneficial Uses
Westside Groundwater Basin	AGR, IND, MUN
Kaweah River	AGR, COLD, COMM, CUL, EST, FRSH, GWR, IND, MIGR, MUN, NAV, PRO, RARE, REC1, REC2, SPWN, WARM, WILD
Kern River	AGR, COLD, COMM, EST, FRSH, GWR, IND, MIGR, MUN, NAV, PRO, RARE, REC1, REC2, SPWN, WILD
Kings River	AGR, COLD, COMM, CUL, EST, FRSH, GWR, IND, MIGR, MUN, NAV, PRO, RARE, REC1, REC2, SPWN, WARM, WILD
Tule River	AGR, COLD, COMM, CUL, EST, FRSH, IND, MAR, MIGR, MUN, NAV, PRO, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD

NOTES:

Beneficial Uses Key:

AQUA (Aquaculture) AGR (Agricultural Supply); COLD (Coldwater Habitat); COMM (Commercial and Sport fishing); CUL (Native American Culture); EST (Estuarine Habitat); FRSH (Freshwater Replenishment); GWR (Groundwater Recharge); IND (Industrial Service Supply); MIGR (Migration of Fish or Aquatic Organisms); MUN (Municipal and Domestic Supply); NAV (Navigation); PRO (Industrial Process Water Supply); RARE (Preservation of Rare and Endangered Species); REC-1 (Body Contact Recreation); REC-2 (Non-contact Recreation); SPWN (Spawning, Reproduction and/or Early Development); WARM (Warm Freshwater Habitat); WILD (Wildlife Habitat.

SOURCE: RWQCB 2018

The Basin Plan requires that all groundwater be maintained as close to natural concentrations of dissolved matter (also called salinity, total dissolved solids or TDS) as is reasonable considering

careful use and management of water resources, except for those areas with specific beneficial use exceptions. No proven means exist at present that will allow ongoing human activity in the Tulare Lake Basin and maintain ground water salinity at current levels throughout the Basin; therefore, the relevant water quality objectives limit the annual increase in salinity instead of identifying a maximum allowable salinity (RWQCB 2018). With few exceptions, none of which apply to the Project area, the maximum average annual increase in salinity measured as electrical conductivity in the Westside Subbasin must not exceed 1 micromhos per centimeter (RWQCB 2018).

State Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems

In 2023, the State Water Resources Control Board updated its Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) to establish a statewide, risk-based, tiered approach for the regulation and management of onsite wastewater treatment systems in order to protect beneficial uses of waters of the state and prevent or correct conditions of pollution and nuisance. The OWTS Policy conditionally waives waste discharge requirements that would otherwise be required to discharge pollutants, in accordance with State Water Code section 13269. Because a septic system is proposed to be installed as part of the Project, the OWTS Policy would be applicable. In this case Fresno County would be the local agency with permit authority under the Local Agency Management Program established by the OWTS policy. The proposed septic system would be required to adhere to minimum standards including those establishing setbacks to wells and waterways, among other water quality considerations.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA, Water Code §10723) provides a framework for sustainable management of groundwater resources. Sustainable groundwater management means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing "undesirable results." Undesirable results in this context are one or more of the following:

- Chronic lowering of groundwater levels
- Significant and unreasonable reduction of groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies
- Significant and unreasonable land subsidence that substantially interferes with surface land uses
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

In groundwater basins designated by DWR as medium and high priority, local public agencies and locally-controlled groundwater sustainability agencies are required to develop and implement GSPs or alternatives to GSPs. DWR has identified the Westside Subbasin as a critically overdrafted subbasin in a high priority groundwater basin within the context of SGMA (DWR 2020).

The Westside Subbasin GSP (as amended, 2022) is the groundwater planning document for the Westside Subbasin (WWD 2022). The goal of the GSP is to develop projects and management actions that result in the sustainable management of the groundwater resources of the Subbasin for the long-term community, financial, and environmental benefits of residents and businesses in the Subbasin. The GSP outlines the approach to achieve sustainable management of groundwater resources within 20 years, and to maintain sustainability through 2070, while maintaining the unique cultural, community, and agricultural business aspects of the Subbasin. As described in the Westside Subbasin GSP, the WWD (as the acting GSA for the basin) identified the following goal for sustainable management of groundwater resources (WWD 2022):

> "The GSA's sustainability goal is to ensure that by 2040, and thereafter within the planning and implementation horizon of this GSP (50 years to 2070), the Subbasin is operated within its sustainable yield and does not exhibit undesirable results."

Conditions within the subbasin will be considered sustainable when the following goals are met:

1. Long-term aggregate groundwater use is equal to the Subbasin's estimated sustainable yield.
2. The average annual volume of groundwater storage changes within the Subbasin, averaged across the Subbasin- is approximately zero coincident with the achievement of sustainable groundwater levels at measurable objective groundwater elevations.
3. Groundwater levels are maintained at the set measurable objectives. The measurable objectives represent water levels present during sustainable conditions including a margin of operational flexibility, and will avoid undesirable results, such as lowering groundwater levels that result in significant and unreasonable depletions of available water supply for beneficial uses available to groundwater users.
4. Groundwater quality will be maintained at constituent concentrations in those areas of the Subbasin where degraded water quality does not already exist prior to the .
5. Subsidence is maintained at levels that do not significantly impact operations of critical infrastructure such as the California Aqueduct/San Luis Canal within the Subbasin.
6. Sustainability goals for interconnected surface water and seawater intrusion are not provided as a result of the absence of these indicators in the subbasin.

The GSP identifies the following five projects and management actions (PMAs) to address groundwater sustainability goals and avoid undesirable results in the subbasin:

- **Surface Water Imports**. The WWD expects to continue importing water from the Central Valley Project and to supplement it with water made available through transfers and exchanges.
- **Initial Allocation of Groundwater Extraction**. Each landowner with land overlying the Subbasin will continue to have access to groundwater in accordance with an allocation plan.

Between 2022 and 2030, there will be a transition period in which a uniform annual allocation is established at 1.3 acre feet per acre and then subsequently reduced each year by 0.1 acre foot until an eventual 0.6 acre-foot per acre allocation is reached. The groundwater allocation is estimated based on provisionally allocating the sustainable yield among landowners with land overlying the Subbasin. WWD -owned and retired lands are not eligible for a groundwater allocation.

- **Aquifer Storage and Recovery**. Imported water would be directly injected into the aquifer using retrofitted production wells on private lands. Injected water would contribute to a landowner's groundwater allocation.
- **Targeted Pumping Reductions**. The GSA would provide landowners with incentives to reduce pumping in a given water year to prevent water level declines in sensitive portions of the aquifer system (along the San Luis Canal).
- **Percolation Basins**. The WWD would construct and operate percolation basins on District-owned lands located along the western margin of the Subbasin.

Municipal and industrial groundwater well locations will be subject to the GSP if the extraction rates exceed 2 AFY; however, municipal and industrial users currently are not subject to the allocation management plan[1] (WWD 2020).

Executive Order N-7-22

In response to extreme and expanding drought conditions in California, the Governor issued Executive Order 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-regulated medium or high-priority groundwater basin unless (1) the Groundwater Sustainability Agency managing the basin verifies in writing that the proposed groundwater extractions: (i) would be consistent with any applicable Groundwater Sustainability Plan, and (ii) 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. As the Westland Subbasin is defined as a high priority groundwater basin, WWD, the GSA 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 before Fresno County could permit this construction.

[1] Pursuant to the GSP, continued extraction of groundwater by any agricultural or M&I water user will require metering by the January 1, 2025 deadline (WWD 2020).

Regional and Local

NPDES Construction General Permit

Construction associated with projects that would disturbs more than one acre of land surface affecting the quality of stormwater discharges into waters of the United States is subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2022-0057-DWQ, NPDES No. CAS000002). The Construction General Permit (CGP) regulates discharges of pollutants in stormwater associated with construction activity to waters of the U.S. from construction sites that disturb one acre or more of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The CGP requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards;
- Good site management "housekeeping;"
- Non-stormwater management;
- Erosion and sediment controls;
- Run-on and runoff controls;
- Inspection, maintenance, and repair; or
- Monitoring and reporting requirements.

The CGP requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the CGP. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before the construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list BMPs and the placement of those BMPs that the applicant would use to protect stormwater runoff. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The CGP also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

In the Project area, the CGP is implemented and enforced by the Central Valley RWQCB, which administers the stormwater permitting program. Dischargers must electronically submit a notice of intent and permit registration documents to obtain coverage under this CGP. Dischargers are to notify the Central Valley RWQCB of violations or incidents of non-compliance, and submit annual reports identifying deficiencies in the BMPs and explaining how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a State Qualified SWPPP Developer, and implementation of the SWPPP must be overseen by a State Qualified SWPPP Practitioner. A legally responsible person, who is legally authorized to sign and certify permit registration documents, is responsible for obtaining coverage under the permit.

Fresno County Ordinance Code

Title 14 of the Fresno County Ordinance Code specifies regulations to conserve and protect water resources throughout the County. Chapter 14.01 pertains to water conservation to prevent the unreasonable use of County water supplies and regulates the use of water services and facilities. Chapter 14.03 pertains to groundwater management by establishing policy prohibiting the direct or indirect transfer of groundwater outside of the County. Chapter 14.04 establishes standards and regulations for well construction, pump installation and well destruction to protect persons from contaminated or polluted water and to maintain groundwater quality (County of Fresno 2021).

Fresno County 2000 General Plan

The following policies identified in the Open Space and Conservation Element of the Fresno County General Plan (County of Fresno 2000) are applicable to the Project:

> ***Policy OS-A.13:*** The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater.

Policy OS-A.19: The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.

Policy OS-A.23: Policy OS-A.23 The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts:

a. Identifying and controlling sources of potential contamination;

b. Protecting important groundwater recharge areas;

c. Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible;

d. Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and non-domestic uses);

e. Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area;

f. Considering areas where recharge potential is determined to be high for designation as open space; and

g. Developing conjunctive use of surface and groundwater.

Policy OS-A.25: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.26: 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.

Policy OS-A.27: The County shall monitor water quality regularly and take necessary measures to prevent contamination, including the prevention of hazardous materials from entering the wastewater system.

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.

4.11.2 Significance Criteria

The Project would result in significant impacts to hydrology and water quality if it would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

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 off-site,

   ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite,

   iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or

   iv. impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.11.3 Direct and Indirect Effects

4.11.3.1 Methodology

This environmental analysis of the potential impacts related to hydrology and water quality from the construction, operation, and decommissioning of the Project and Alternatives is based on a review of the results of the site-specific investigations, a review of literature and database research and the Fresno County General Plan, information regarding proposed Project construction details, and the description of potential uses and associated operations at the Project site under the Project.

The Project would be regulated by the various laws, regulations, and policies summarized in Section 4.11.1.2, *Regulatory Setting*. Compliance by the Project with applicable federal, state, and local laws and regulations is assumed in this analysis and local and state agencies would be expected to continue to enforce applicable requirements to the extent that they do so now. Note that compliance with many of the regulations is a condition of permit approval.

A significant impact would occur if, after considering the features described in in Chapter 2, *Project Description*, and the required compliance with regulatory requirements, a significant impact would occur. For those impacts considered to be significant, mitigation measures are proposed to the extent feasible to reduce the identified impacts.

4.11.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact for criteria a), b, c) and e). It would result in no impact for criterion d). The impact conclusions for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Impact 4.11-1: The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. (*Less-than-Significant Impact*)

Construction

Prior to construction, site preparation would include grubbing and grading. Project construction activities would include excavation and grading for the installation of roads and other facilities (e.g., solar modules, Project substation, and the O&M building). These activities would involve the use of scrapers, dozers, tractors, backhoes, excavators, and other common types of construction vehicles and equipment—all of which can contribute to erosion and sedimentation. Additionally, the use of construction equipment may involve the accidental release of fuel, oils, and other potentially hazardous substances at the construction site.

Site preparation may include application of pre-emergent herbicides, which would be applied in accordance with applicable regulations and by a state-licensed pesticide applicator. Additionally, as discussed in Chapter 2, *Project Description*, the Project would utilize water for dust suppression during construction and could generate runoff that may act as a vehicle to transport pollutants to surface water bodies during storm events, and/or infiltrate into groundwater, resulting in the degradation of water quality. However, the amount of water and the manner in which it would be applied would not exceed site soil absorption capabilities, so as to avoid runoff conditions. If deemed necessary based on preconstruction drainage analysis and local grading requirements, the Project may include on-site detention or retention basins that would serve to retain stormwater runoff.

As discussed in Section 4.11.1.2, *Regulatory Setting*, construction and decommissioning of the Project would be subject to the NPDES Construction General Permit if there is a nexus to waters of the United States. The Construction General Permit would include development and implementation of a SWPPP. The objectives of a SWPPP are to identify sources of sediment and other pollutants that may be delivered off-site in the form of runoff and affect the quality of storm water discharge; to implement site controls and practices to reduce stormwater pollution; and to protect water quality of receiving waters. The SWPPP would include site-specific BMPs, to be identified by a qualified SWPPP developer (QSD) and implemented by a qualified SWPPP practitioner (QSP), to minimize erosion on site and reduce or otherwise prevent conditions of erosion and storm water runoff. Implementation of the Construction General Permit requirements, including the preparation and implementation of a SWPPP and associated BMPs, would reduce potential impacts to water quality to less-than-significant levels. In the absence of a nexus with waters of the United States, the Project would implement a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation. See Section 2.5.8.1, *Erosion Control and Water Quality*, in the Project Description, which describes this Applicant-proposed commitment.

Operations and Maintenance

Altered impervious surface areas or topography can change drainage patterns such that stormwater is concentrated or increased and result in sedimentation or erosion that can affect water quality. PV modules are proposed to be installed approximately 6 feet above the ground surface, mounted on a single-axis horizontal tracking system. With the exception of during mid-day, the PV solar modules would be tilted to track with the position of the sun relative to the site and would not result in increased runoff volumes due to the separation between panels. Thus, in a precipitation event, runoff volumes generated would be similar to existing conditions and would not degrade water quality. The Project also would include paved access driveways and a parking area for the 6,000 square-foot O&M building. As described in Section 2.5.1.4, although no on-site stormwater detention systems currently are planned, if deemed necessary based on preconstruction drainage analysis and local grading requirements, the Project may include on-site detention or retention basins to retain stormwater runoff. Such basins would be expected to remain dry except during or just after a rain event.

In addition, the Project would be subject to post-construction requirements of the Construction General Permit if stormwater would discharge to waters of the United States, which require maintenance of pre-Project drainage patterns. Compliance with mandatory requirements in the Construction General Permit would reduce the potential for runoff from solar panels and other facilities to degrade water quality by eroding sediment from the Project site or adjacent areas during Project operation and maintenance. Project operations and maintenance could involve the use of solvents, diesel fuel for an on-site generator, and mineral oil used as an insulation medium and coolant in transformers and other electrical equipment. As discussed in Section 4.10, *Hazards and Hazardous Materials*, pursuant to state law (Health and Safety Code §25500 et seq.) a hazardous materials business plan would be prepared and implemented to prevent the release of substances that could otherwise be detrimental to water quality. As noted above, in the absence of a nexus to waters of the United States, the Project would implement a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation. See Section 2.8, *Erosion Control and Water Quality*, in the Project Description, which describes these Applicant-proposed commitments.

As discussed in Section 4.11.1.1, elevated salinity (TDS or “salts”) is a groundwater impairment within the Westside Subbasin and land (or water) uses that increase the groundwater TDS would exacerbate this impairment. Under some circumstances, particularly under irrigated agriculture, as pumped groundwater is applied to land water is lost to evapotranspiration, further increasing the concentration of salts in the soil and ultimately in the groundwater (Pauloo et al. 2020). Water required for panel washing (0.02 AFY) would be deionized and trucked to the Project site or obtained through a new groundwater well on site (and deionized through reverse osmosis treatment process). Therefore, this water would not conflict with the non-irrigation agreement, nor increase TDS concentration and compromise groundwater quality. Operation and

maintenance of the Project would not violate water quality standards by increasing salinity of groundwater and would not otherwise substantially degrade groundwater quality.

Approximately 2 AFY of water, most of which would be supplied by a new groundwater well drawing from the Westside Subbasin, would be required for Project operation and maintenance (1.92 AFY for the O&M building and 0.08 AFY, on average, for panel washing), which equates to approximately 70 AF over the lifetime of the Project. The development of this well would be subject to review and approval from Fresno County. Most of the water would be used in the O&M building and would not be applied to land. This average annual AF of water demand required would be less than 0.001 percent of the sustainable yield of the Westside Subbasin, as identified in the GSP. The projects and management actions in the GSP are formulated to achieve sustainable conditions in the Subbasin, including maintaining groundwater quality trends consistent with the rate of allowable increases in water quality pollutants identified in the Basin Plan, including salinity (WWD 2020). As discussed in Impact 4.11-2, the Project would not impede sustainable management of the Westside Subbasin. Operation and maintenance of the Project would be managed in a manner that would not contribute to other degradation of water quality.

The impacts on surface water and groundwater quality during operation and maintenance would be less than significant.

Decommissioning and Site Reclamation

Potential impacts resulting from Project decommissioning and site reclamation activities would generally be similar to those described for construction, namely involving the potential for erosion and/or release of construction-related water quality pollutants. Decommissioning and site reclamation activities would be required to comply with the same applicable federal, state, and local water quality regulations. Ground disturbing activities during decommissioning and site reclamation would require coverage under the Construction General Permit if they impacted waters of the United States, including the preparation and implementation of the required SWPPP and associated BMPs. Storm water management measures would be required to be identified and implemented that would effectively control erosion and sedimentation and other construction related pollutants during decommissioning and site reclamation. Therefore, the potential impact of the Project's decommissioning activities on water quality would be temporary and less than significant.

As noted above, in the absence of a nexus to waters of the United States, the Project would implement a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation.

The Project's impacts on water quality standards or waste discharge requirements would be temporary, and less than significant.

Mitigation: None required.

Criterion b) Whether the Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

Impact 4.11-2: The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. ***(Less-than-Significant Impact)***

Construction

Construction water requirements would consist of non-potable water for dust suppression and other purposes and would be provided by a new on-site well, pumped from the Westside Subbasin. The primary source of water to be used during construction is groundwater from the Westside Subbasin. An estimated 300 acre-feet of water would be required over the up to 14-month construction period.

Water would be provided from an on-site well or would be trucked to the site. The primary source of water for the Project would be groundwater from a proposed on-site well to be installed by the Applicant. The groundwater well location has not yet been determined but based on the Project location would likely draw groundwater from the Westside Subbasin.

As discussed above, the Westside Subbasin is currently over drafted. Based on this determination, the WWD (in its role as the GSA for the Westside Subbasin) has prepared a GSP for the basin. The projects and management actions identified for sustainable management of the subbasin include surface water imports, initial allocation of groundwater extraction, aquifer storage and recovery, targeted pumping reductions, and percolation basins. The Project would not impede implementation of these projects and management actions. While it would extract groundwater, it would not be eligible for or impede the initial allocation of groundwater extraction management action because municipal and industrial users currently are not subject to the allocation management plan. Moreover, because the site contains retired lands (precluded from irrigation as a result of the Peck Settlement) the site would not be subject to allocation limits. The Project is not located in an area proposed as a percolation basin, nor in one identified for targeted pumping reductions.

The WSA and its addendum prepared for the Project (Appendix C) evaluated whether the Project's proposed new well and the estimated groundwater extraction of 300 AF over a period of 12 to 14 months would result in conflicts with the sustainability goals for the Westside Subbasin. The evaluation determined (based on calculated drawdown using a demand rate of 186 gallons per minute pumping continuously over a 12-month period) that a one-time water level impact of an estimated 0.49 feet over an area of 0.5 mile from the proposed groundwater well could occur. However, this level of discrete and temporary drawdown does not meet the threshold identified in the Amended GSP. According to the GSP, the undesirable result from chronic lowering of groundwater levels is 25 percent of wells below the minimum threshold for two consecutive spring measurements. The WSA (Appendix C) concluded that the Project's temporary peak

demand of 300 AF during construction would not conflict with the GSP or adversely impact groundwater supply in the Westside Subbasin.

Furthermore, taking into consideration that the short-term, temporary construction demand of the Project is less than 0.0025 percent of the estimated sustainable yield of the Subbasin under baseline conditions, the Project would not impede sustainable groundwater management of the basin. Therefore, Project construction would not substantially decrease groundwater supplies or interfere with groundwater recharge, and any impacts from Project construction would be temporary and less than significant.

Operation and Maintenance

Project site development would consist of a limited addition of impervious surfaces, including a substation control room building foundation, operation and maintenance building, access roads, and foundations for PV modules, and utility poles. The PV modules would have space between them and would be elevated off the ground. Therefore, the PV modules would not contribute to any potential interference with groundwater recharge.

Up to 2 AFY would be required for operation and maintenance of the Project. It is anticipated that groundwater well metering will go into effect in 2025. The GSP has established projects and management actions (outlined in the regulatory setting) to ensure the sustainability of groundwater in the Westside Subbasin. However, it is uncertain whether the PMA would be applicable to the Project site. The WSA amendment prepared for the Project (Appendix C) noted that, based on the fact that the property is owned by WWD and is considered retired (i.e. not contracted land and has not received surface water for the last 10 years, does not receive surface water import in perpetuity due to the non-irrigation agreement Peck settlement), it appears that the Project property is not subject to the groundwater allocation outlined in the GSP. The WSA concluded that the 2 AFY of water required during Project operation and maintenance would not conflict with the PMAs identified in the GSP and is not expected to adversely impact groundwater supplies in the Westside Subbasin. The total water demand during the Project's operations and maintenance phase would be 2 AFY; therefore, groundwater extracted for operation and maintenance of the Project would be considered *de minimis* and would not impede sustainable management of the Westside Subbasin.

Because the water required for operations and maintenance is small in relation to the entire basin, the Project would not decrease groundwater supplies or interfere with groundwater recharge, nor would it impede sustainable groundwater management. Therefore, the impact on groundwater supplies or recharge during operation and maintenance would be less-than-significant.

Decommissioning and Site Reclamation

The Applicant would decommission the Project at the end of its operable life, estimated at 35 years from the start of operations. It is possible that through maintenance of existing equipment or with equipment replacement the useful life of the Project could extend beyond the WSA 20-year projection. For the purposes of this analysis, it is assumed that the Project would require a similar amount of water as was estimated for construction (approximately 300 AF) to decommission and reclaim the site. Water use for decommissioning would mainly consist of dust suppression and

other soil stabilization activities. While the WSA concludes that there is sufficient water supply available to meet Project construction, operation, and maintenance demands, it does not address the availability of the water supply at the time the Project would be decommissioned.

The objective of the WSA is to determine water supply availability during normal, single dry, and multiple dry water years during a 20-year projection, to meet the projected water demand associated with the proposed Project. However, the WSA does not account for annual groundwater production from the Project beyond the 20-year mark. Therefore, there is no conclusion in the WSA as to the availability of the 300 AF of groundwater that would be required during decommissioning of the Project.

The amount of groundwater required would exceed the *de minimis* threshold for municipal and industrial groundwater use that the WWD may enact in the future. Based on the GSP, future management actions may be taken to prevent the chronic lowering of the groundwater table. However, assuming that the GSP groundwater allocation PMA could apply to Project decommissioning, the annual amount of water needed for decommissioning would be far below the annual amount that would be allocated based on the site acreage. Given that the Project site contains 2,000 acres and an allocation of 0.6 AF per acre (after 2030) could apply, the allocated amount of groundwater would be 1,200 AF. Moreover, the water use (not lost to evaporation while used for soil stabilization) for decommissioning would presumably return to the groundwater basin. Similar to construction, decommissioning would not affect the other GSP projects and management actions, nor adversely deplete the groundwater basin. Therefore, decommissioning of the Project would not impede sustainable groundwater management of the Subbasin and impacts would be less than significant.

Criterion c.i-c.iv) Whether the Project would 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 off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.

Impact 4.11-3: The Project would not 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: i) Results in substantial erosion or siltation on- or off-site; ii) substantially increases the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) creates or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff; or iv) impedes or redirects flood flows. (*Less-than-Significant Impact*)

Construction

As discussed in Impact 4.11-2, the Project would introduce a minimal amount of new impervious surfaces, and the Project site is not within a flood zone. No streams or drainage channels traverse the site.

Project construction would involve ground disturbance (e.g., grubbing, grading, and excavation), which could change drainage patterns and result in localized erosion, sedimentation, and/or runoff at the Project site. As discussed in Impact 4.11-1, required conformance with the standards, requirements, and regulations associated with the Construction General Permit would include the implementation of a SWPPP and associated BMPs, which would limit contamination, erosion, siltation, and runoff from leaving the site and entering surrounding waterways. Site preparation and Project construction would be performed in accordance with the SWPPP and associated BMPs to reduce the adverse effects of erosion, sedimentation, and polluted runoff. Although construction activities could increase the potential for erosion or siltation and runoff at the Project site, which could introduce contaminants and other pollution into surrounding waterways, compliance with the NPDES Construction General Permit, and associated SWPPP and BMPs, would reduce the potential for these impacts to occur. Impacts associated with the Project's construction would, therefore, be less than significant.

The Project has been designed so that site drainage would follow the pre-Project drainage patterns. The Project site is relatively flat (with slopes of 0 to 1 percent) and none of the Project facilities, including fences, panel posts, or building or utility pole foundations, would obstruct stormwater flow. No on-site detention facilities currently are planned; however, if deemed necessary based on preconstruction drainage analysis and local grading requirements, the Project may include on-site detention or retention basins to retain stormwater runoff.

Operation and Maintenance

Although the Project would introduce over 1,000 acres of PV modules, the modules would stand approximately 6 feet above the ground surface and would not result in increased runoff volumes due to the separation between panels. Thus, in a precipitation event, runoff volumes generated would be similar to existing conditions and would not result in new erosion, siltation, or flooding. The grading necessary to construct the Project's civil components (e.g. access roads, building pads for the substation, operation and maintenance building, and parking lots) would be designed to follow natural drainage patterns. The main differences between pre- and post-Project hydrological conditions would be the inclusion of access roads and easement with may be slightly elevated. Because there would be no appreciable topographic alteration, the patterns and direction of runoff would be similar to pre-Project drainage conditions (Dudek 2020). Additionally, the Project site is not in a mapped flood zone nor is it traversed by any streams, and therefore would not impede or redirect flood flows. Adherence to the federal and state laws (discussed in the Regulatory Setting) would ensure that impacts would be temporary and less than significant.

Decommissioning

As discussed in Section 2.5.7, *Decommissioning and Site Reclamation*, various measures would be undertaken following the term of the Project's operation to ensure that the site would be returned to a condition similar to baseline (preconstruction) conditions. During the up-to 12-

month period of decommissioning the Project sponsor would use large construction equipment to dismantle structures. As part of the site reclamation process Project access roads, parking area and associated paved (impervious) surfaces would be removed. The site would be graded and disked, if necessary, to return the site to pre-construction conditions. Industry best practices would be employed for site decommissioning and reclamation. Additionally, as with construction, decommissioning would disturb more than one-acre of soil surface. Therefore, a Construction General Permit would be required and a SWPPP with BMPs would be implemented. Measures in the SWPPP would ensure for example, that water (used for dust control) would not be applied in a manner that would contribute to conditions of runoff. Impacts during the decommissioning phase would be similar to construction and less than significant.

Mitigation: None required.

Significance: Less than significant.

Criterion d) Whether the Project would be located in a flood hazard, tsunami, or seiche zone, and risk the release of pollutants due to Project inundation.

According to the FEMA Flood Insurance Rate Map (FIRM) and the Fresno County Multi-Hazard Mitigation Plan, the Project site does not lie within a 100-year flood zone or any other special flood hazard zone, nor is it within a dam inundation zone. Additionally, the Project site is over 70 miles inland from the Pacific Ocean and there are no large bodies of water nearby; therefore, the Project site is not at risk of being inundated by a tsunami or seiche. There would be no impact under this criterion. **(*No Impact*)**

Criterion e) Whether the Project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact 4.11-5: The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (*Less-than-Significant Impact*)

As discussed above, the Project would be regulated in accordance with the Basin Plan for the Tulare Lake Basin, as well as the Westside Subbasin GSP. Project construction activities would be regulated under the Construction General Permit and associated SWPPP if the Project would implicate waters of the United States, or a substantially similar plan if no waters of the United States are implicated. Adherence with the conditions stipulated by the SWPPP and the NPDES permits, or substantially similar plans, would help reduce water quality impacts of construction and decommissioning and ensure conformance with the applicable Basin Plan. There would be no impact related to conflict with, or obstructing, a water quality control plan.

As discussed in Impact 4.11-2, the Project would not impede the projects and management actions identified in the Subbasin's GSP. In addition, the WSA concluded that the Project water demand would not exceed the sustainable yield of the Subbasin. Although the Project would

introduce new impervious surfaces, the majority of the Project site would remain unpaved. Precipitation falling upon PV solar modules would not increase runoff from the site and groundwater recharge would not be impeded. A less-than-significant impact would result.

4.11.3.3 PG&E Infrastructure

To accommodate the Project, PG&E would extend an existing 230 kV gen-tie line by up to 0.2-mile to connect with the Project's proposed substation. The PG&E transmission line extension would include 230 kV conductor strung on approximately six new or existing tubular steel poles that would be approximately 140 feet high.

The additional impervious surface area added as part of the PG&E infrastructure would be minimal and development associated with the PG&E infrastructure would be included in the permitting details of the NPDES Construction General Permit and associated SWPPP and BMPs, which would reduce the impacts associated with erosion and siltation. Therefore, activities associated with the PG&E interconnection infrastructure, as a component of the overall Project, would result in a less-than-significant impact to hydrology and water quality, and the combined impacts of the Project and PG&E infrastructure would be less-than-significant.

4.11.3.4 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Compared to the Project, Alternative 1 would involve a 20-percent smaller overall area of soil disturbance within the boundary identified as the Project site. The disturbance area would be reduced by approximately 340 acres and the remaining on-site acreage would remain vacant. Similar to the Project, Alternative 1 would require coverage under the Construction General Permit and the designated construction contractor would develop a SWPPP and implement BMPs to reduce stormwater runoff and protect water quality during construction. Compared to the Project, impacts would be reduced to some extent, due to the overall reduction in ground disturbance. As with the Project, proposed facilities would not be located in a flood hazard zone, nor in an area subject to seiche or tsunami. Therefore, there would be no risk for inundation and site contamination associated with these hazards under a reduced acreage alternative. Similar to the Project, Alternative 1 would also result in less than significant impacts with respect to hydrology and water quality.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. No structures would be erected, and no ground disturbance would occur. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions (attributable to the Project), the No Project Alternative would cause no impact to hydrology and water quality.

4.11.4 Cumulative Analysis

As discussed above, there would be no impact with respect to being located in a flood hazard, tsunami, or seiche zone. Therefore, neither the Project nor an alternative could cause or contribute to any potential significant cumulative impact with respect to these considerations. The remaining Hydrology and Water Quality considerations are evaluated below.

The geographic scope of analysis of cumulative effects includes the Project site, affected waterways, and surrounding watersheds and aquifers potentially impacted by site clearing, construction, operation and maintenance, and decommissioning of the Project. The cumulative development for water quality includes all development within the Basin Plan; the cumulative context for groundwater is the Westside Subbasin boundary. Consideration of the cumulative scenario includes effects of past projects within and surrounding the Project site, as well as current and reasonably foreseeable activities that could influence land contours and hydrology across the landscape. This analysis considers the incremental effects of the Project to determine whether, when added to the effects of other projects in the cumulative scenario, the Project would cause or contribute to significant cumulative effects.

The temporal scope of construction-related cumulative effects is the 10- to 14-month construction period. The temporal scope for cumulative operation and maintenance related activities is assumed to be the 35-year life expectancy of the Project. This analysis also considers cumulative effects of decommissioning and site restoration for a period of roughly 12 months.

Because potential water quality impacts posed by the Project would be reduced through implementation of various Applicant proposed or SWPPP related BMPs and other measures committed to by the Applicant and designed to protect waterways and through compliance with water quality standards or waste discharge requirements, no significant impact would result. Cumulative projects would be required to comply with the same regulations. When considered in combination with the effects of other projects, the Project's incremental contribution to potential significant cumulative effect would not be cumulatively considerable.

In the absence of requirements governing water quality, the Project, in combination with other past, present, and reasonably foreseeable future development in the Tulare Basin Plan area watersheds would continue to contribute runoff and discharges that contain constituents from agriculture, industrial, and urban land uses. Likewise, activities could also continue to affect groundwater quality in the Westside Subbasin, which would be considered a potentially significant cumulative impact. Recognizing the potential for ongoing impacts to water quality in the Basin Plan area, inclusive of the Westside subbasin area, regular updates to the Basin Plan and associated water quality regulations are implemented. Such regulations, respective of state anti-backsliding requirements would presumably be *as or more effective*, compared to current water quality requirements (such as those listed in the regulatory setting in this section).

As described previously, development of the Project would include activities that could result in the degradation of surface water and groundwater quality. The Project, as with other projects in the cumulative scenario, would be required to comply with the current and future Basin Plan, applicable NPDES Permit requirements and ordinances, and other water quality regulations.

These independently-enforceable regulatory requirements and the design of the Project to generally maintain the existing contours of the site would reduce the Project's incremental contribution to the cumulative impact to a less-than-considerable level.

The Project, in combination with other past, present, and future development in the Westside Subbasin area would require the use of groundwater for construction, operations, and decommissioning activities. Groundwater pumping would be regulated by the effective Westside Subbasin GSP. GSP is a programmatic cumulative water use scenario that includes a consideration of long-term management for sustainability of the subbasin. As discussed in Impact 4.11-2, the Project would not impede the projects and management actions identified in the Subbasin's GSP. In addition, the WSA concluded that the Project temporary water use during construction and long-term operational water demand would not exceed the sustainable yield of the Subbasin.

Groundwater pumping activities for other development projects would be required to obtain similar WSAs applicable to those development projects, which would ensure that sufficient groundwater supplies would be available, and that the Project would not be in conflict the with Westside Subbasin GSP. Therefore, the Project would not have a cumulatively considerable contribution to any significant cumulative impact on groundwater supplies.

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4.12 Land Use and Planning

This section identifies and evaluates issues related to Land Use and Planning in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Land Use and Planning (Appendix A, *Scoping Report*).

4.12.1 Setting

4.12.1.1 Study Area

The study area for the analysis of potential impacts to land use and planning is defined as the Project site, including all areas of temporary and/or permanent ground disturbance and the surrounding land uses within which the Project would be constructed, operated, and ultimately decommissioned.

4.12.1.2 Environmental Setting

The Project site is located on approximately 2,000 acres in unincorporated western Fresno County that, in recent years, periodically have been dry farmed for grain for rangeland grasses or lain fallow. The Project site is generally bounded by State Route 33 (SR 33, also known as South Derrick Avenue) to the west, West Manning Avenue to the south, South Merced Avenue to the east, and West Adams Avenue to the north. West South Avenue bisects the site from east to west.

The Project site lies within Fresno County's jurisdiction and land uses on the Project site are governed by the Fresno County General Plan and Zoning Ordinance. Agricultural uses, other solar facilities, and the existing public utilities use (i.e., the existing Tranquillity Switching Station) generally surround the Project site.

The nearest community to the Project site is the City of Mendota, which is located approximately 9 miles north. The next closest communities to the Project site are Tranquillity, which is located approximately 7 miles east, and the City of San Joaquin, which is located approximately 10 miles east.

4.12.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern land use or planning on the Project site.

State

California Public Utilities Commission General Order No. 131-D

The California Public Utilities Commission (CPUC) would have sole and exclusive jurisdiction over PG&E's construction, operation and maintenance of the PG&E infrastructure and

improvements that would be needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities within the State. PG&E's work (as regulated by the CPUC) would not be subject to the County's land use approval requirements (CPUC General Order No. 131-D §XIV.B). Although local jurisdictions are preempted from using their local land use authority to regulate electric facilities constructed by public utilities such as PG&E, PG&E nonetheless would be required to consult with the County pursuant to Section XIV(B) regarding land use matters (Id.).

Local

Fresno County General Plan

The Fresno County General Plan is the County's long-range planning document. It consists of seven elements: Economic Development; Agriculture and Land Use; Transportation and Circulation; Public Facilities and Services; Open Space and Conservation; Health and Safety; and Housing. The Agriculture and Land Use Element describes the County's Land Use Diagram and related development standards for unincorporated land within the County, and sets out goals, policies, and implementation programs for Resource Lands (including agriculture), Rural Development (non-agriculture), Urban Development, and Administration (Fresno County 2000).

The public review drafts of the General Plan Background Report, Policy Document, and Zoning Ordinance Update were released on January 26, 2018. On April 14, 2020 the Board of Supervisors approved a Revised Scope of Work for the General Plan Review and the Zoning Ordinance Update. Public review drafts of the revised General Plan Policy Document, Background Report, and Zoning Ordinance Update were released in July 2021 (Fresno County 2021). Because the updated General Plan has not been approved, and no resulting revisions to the 2000 General Plan and the Zoning Ordinance have been made, the provisions of the 2000 General Plan and the Zoning Ordinance continue to govern use of the Project site and are considered in this analysis.

The Project site is designated in the General Plan for "Agriculture," which provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities (General Plan Table LU-3). No overlay designations, regional plans, community plans, or specific plans described in the General Plan apply to the Project site, and there are no lands subject to a Williamson Act contract within the Project site (Fresno County 2000). Section 3.3, *Agriculture and Forestry Resources*, contains specific information pertaining to Agriculture resources within and near the Project site.

The Project site is not located within the jurisdiction of a community plan, specific plan, or regional plan as identified by the Fresno County General Plan. General Plan policies that are relevant to the Project include:

> ***Policy LU-A.3:*** The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value added processing facilities, and certain non-agricultural uses listed in Table LU-3. Approval of these and similar uses in areas designated Agriculture shall be subject to the following applicable criteria:

a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;

b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;

c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;

d. A probable workforce should be located nearby or be readily available.

Policy LU-A.13: The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.

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.

Policy LU-A.16: The County should consider the use of agricultural land preservation programs that improve the competitive capabilities of farms and ranches, thereby ensuring long-term conservation of viable agricultural operations. Examples of programs to be considered should include: land trusts; conservation easements; dedication incentives; new and continued Williamson Act contracts; Farmland Security Act contracts; the California Farmland Conservancy Program Fund; agricultural education programs; zoning regulations; agricultural mitigation fee program; urban growth boundaries; transfer of development rights; purchase of development rights; and agricultural buffer policies.

General Plan programs that are relevant to the Project include:

Program LU-A.C: The County shall develop and implement guidelines for design and maintenance of buffers to be required when new non-agricultural uses are approved in agricultural areas. Buffer design and maintenance guidelines shall include, but not be limited to, the following:

a. Buffers shall be physically and biologically designed to avoid conflicts between agriculture and non-agricultural uses.

b. Buffers shall be located on the parcel for which a permit is sought and shall protect the maximum amount of farmable land.

c. Buffers generally shall consist of a physical separation between agricultural and non-agricultural uses. The appropriate width shall be determined on a site-by-site basis taking into account the type of existing agricultural uses, the nature of the proposed development, the natural features of the site, and any other factors that affect the specific situation.

d. Appropriate types of land uses for buffers include compatible agriculture, open space and recreational uses such as parks and golf courses, industrial uses, and cemeteries.

e. The County may condition its approval of a project on the ongoing maintenance of buffers.

f. A homeowners' association or other appropriate entity shall be required to maintain buffers to control litter, fire hazards, pests, and other maintenance problems.

g. Buffer restrictions may be removed if agricultural uses on all adjacent parcels have permanently ceased. (See Policy LU-A.16)

Program LU-A.E: The County shall continue to implement the County's Right-to-Farm Ordinance, and will provide information to the local real estate industry to help make the public aware of the right-to-farm provisions in their area. (See Policy LU-A.15)

Program LU-A.I: The County shall assess the approaches to determining agricultural land values in the 1981 Farmland Protection Policy Act land evaluation and site assessment (LESA) system, and the Tulare County Rural Valley Lands Plan, 1975 amendment, to determine the potential for developing a similar process for identifying and ranking the value of agricultural land in Fresno County. If appropriate, the County shall establish an agricultural quality scale system to assist the Planning Commission and Board of Supervisors in agricultural land use conversion decisions. (See Policy LU-A.16.)

Fresno County Zoning Ordinance

According to the Fresno County Zoning Map, the Project site is zoned "Exclusive Agricultural, 20-acre minimum parcel size (AE-20)". Fresno County Zoning Ordinance Code Section 816.2.D identifies electrical transmission substations and electric distribution substations as uses permitted subject to Director Review and Approval (DRA) (Fresno County 2018a). Water well drilling is also a permitted use within the AE-20 zone, in the event that a new groundwater well is installed to provide or supplement onsite water needs.

The County processes PV solar facility projects through a separate use permit process (the Unclassified Conditional Use Permit [CUP] process) for public utility and public services, structures, uses and buildings, as described in Code Section 853.B.14 (Fresno County 2018b). Where, as in this case, a project is subject to two or more separate use permits, the County evaluates the entire project under the more-intensive process. Since the CUP process is more intensive than the DRA process, the County is reviewing the proposed substation as part of the CUP process for the larger facility. Thus, the substation proposed as part of the Project does not require a separate DRA.

Fresno County Solar Facility Guidelines

The Solar Facility Guidelines adopted by the Fresno County Board of Supervisors on May 21, 2013, and revised on December 12, 2017, provide general guidelines and policies, as well as an outline for the process of evaluating solar facilities within the County (Fresno County 2017). Multiple provisions applicable to the process for the review of applications for solar facilities are relevant to this analysis of potential impacts to Land Use and Planning, including the following:

1. Information shall be submitted regarding the historical agricultural operational/usage of the parcel, including specific crop type and crop yield, for the last 10 years (if no agricultural operation in the last 10 years, specify when land was last in agricultural use); and

3. Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement, and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.

5. List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on Site Plan) and provide factual/technical data supporting the effectiveness of said proposed buffering measure.

7. Provide information documenting efforts to locate the proposed solar facility on non-agricultural lands and non-contracted parcels and detailed information explaining why the subject site was selected.

9. The applicant must acknowledge the County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.

   Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of a new land use permit will need to be obtained.

4.12.2 Significance Criteria

The Project would result in significant impacts to land use and planning if it would:

a) Physically divide an established community;

b) 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.

4.12.3 Direct and Indirect Effects

4.12.3.1 Methodology

The location of the Project site relative to established communities and the nature of the proposed use were evaluated, including for consistency with County land use and planning documents and requirements, to determine whether the Project would result in a significant change to existing land use and planning conditions.

4.12.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would have no impact on Land Use and Planning.

Criterion a)	Whether the Project would physically divide an established community.

As described in Section 4.12.1.2, *Environmental Setting*, the Project site is in rural, unincorporated western Fresno County, approximately 9 miles south of Mendota and 7 miles west of Tranquillity.

Typically, the division of an established community would result from the construction of a physical barrier to neighborhood access or the removal of a means of access. Because the Project is not located within an existing community, the Project would not cross through or physically divide an established community. Although construction, operation, and decommissioning phases of the Project would include the erection and presence of perimeter fencing surrounding the Project site, such features would not create a physical barrier that would physically divide an established community or hinder existing community access. Therefore, the Project would not physically divide an established community. **(*No Impact*)**

Criterion b) Whether the Project would 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.

The County General Plan designates the Project site as AE-20 (Exclusive Agriculture, 20-acre minimum parcel size), and the Project as proposed is consistent with this designation. For example, the Project would be consistent with Policy LU-A.13 regarding the County's protection of agricultural operations from conflicts with nonagricultural uses because the Project would maintain a buffer between the Project and adjacent agricultural operations and would implement a reclamation plan to return the site to a state of readiness for agricultural use after Project decommissioning. The Project would be consistent with Policy LU-A.14 regarding County review of discretionary permits as including an assessment of the conversion of productive agricultural land because potential conversion-related impacts have been addressed in Section 4.3, *Agriculture and Forestry Resources*. The Project also would be consistent with Policy LU-A.16 because the Project site is not subject to a Williamson Act contract and would not interfere with the County's ability to establish agricultural preservation programs. Additional details of the Project's consistency with the Fresno County General Plan policies and programs are provided in Appendix I-1.

The Project site is zoned "Exclusive Agricultural, 20-acre minimum parcel size (AE-20)." The County processes PV solar facility projects through the CUP process for public utility and public services, structures, uses and buildings, as described in Zoning Code Section 853.B.14. If the Project were to be approved, then requisite compliance with conditions of approval for the CUP would ensure the Project would not conflict with the underlying AE-20 zone.

The Project would be required to comply with the Fresno County Solar Facility Guidelines. As described in Section 4.12.1.3, *Regulatory Setting*, these guidelines have been established to protect important farmlands and minimize the impacts of solar projects on adjacent agricultural operations. In order to meet these requirements, the Project would, for example, maintain a 50-foot buffer between the proposed solar facility and adjacent agricultural operations and would implement a reclamation plan to return the site to prior agricultural use (dry farmed agriculture) after Project decommissioning. Details of the Project's consistency with the Fresno County Solar Facility Guidelines are provided in Appendix I-2.

Because the Project would be consistent with applicable provisions of the General Plan, Zoning Code, and the County Solar Facility Guidelines, it would not cause a conflict with the provisions of any applicable County land use plan, policy, or regulation that would result in a significant environmental impact. **(*No Impact*)**

PG&E Infrastructure

Construction and operation of the PG&E infrastructure would not physically divide an established community because no such community is located within or adjacent to these components of the Project; therefore, no impact would occur relative to significance criterion a). Further, the PG&E infrastructure work would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project that has been adopted for the purpose of avoiding or mitigating an environmental effect, and so would cause no impact relative to significance criterion b). The CPUC has sole and exclusive jurisdiction over the PG&E work that would be needed to connect the Project to the grid. CPUC General Order No. 131-D preempts local jurisdictions acting pursuant to local authority from regulating electric facilities and lines constructed by a publicly owned utility subject to CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters. The County expects that the requisite consultation will occur pursuant to the CPUC's process. The County defers to the CPUC's evaluation of consistency with any applicable CPUC plans, policies, and regulations. In evaluating the consistency of the proposed PG&E infrastructure with the County land use plans, policies, and regulations, the County preliminarily has determined that no conflict exists. Therefore, the combined impacts of the Project and PG&E infrastructure would be less than significant.

4.12.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Under Alternative 1, the Reduced Acreage Alternative, the footprint and capacity of the Project would be reduced by 20-percent. Under Alternative 1, a solar energy project would be constructed, operated, maintained, and decommissioned on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 340 acres and the remaining on-site acreage would remain vacant. As with the Project, the solar facilities proposed under Alternative 1 would also require County Director review and CUP approval for their operation upon land with the general plan zoning designation AE-20. Therefore, although the size and capacity of the Project would be reduced under Alternative 1, there would be the same impacts with respect to land use and planning as described for the Project. Alternative 1 would also be consistent with applicable provisions of the General Plan, Zoning Code, and the County Solar Facility Guidelines, it would not cause a conflict with the provisions of any applicable County land use plan, policy, or regulation that would result in a significant environmental impact. ***(No Impact)***

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, gen-tie line, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact to established communities or to any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.12.4 Cumulative Analysis

Because neither the Project nor the alternatives would have any impact on land use and planning, neither the Project nor the alternatives could cause or contribute to any cumulative impact.

4.12.5 References

Fresno County, 2017. Solar Facility Guidelines. Approved by Fresno County Board of Supervisors on May 3, 2011. Revised December 12, 2017. [https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities-p-1621] Accessed August 24, 2021.

Fresno County, 2018a. Zoning Ordinance of the County of Fresno, Section 816: "AE" Exclusive Agricultural District. Amended June 12, 2018. [https://www.co.fresno.ca.us/home/showdocument?id=36254] Accessed August 24, 2021.

Fresno County, 2018b. Zoning Ordinance of the County of Fresno, Section 853B: Unclassified Conditional Use Permits. Amended June 12, 2018. [https://www.co.fresno.ca.us/home/showdocument?id=20197] Accessed August 24, 2021.

Fresno County, 2000. Fresno County General Plan Agriculture and Land Use Element. Adopted October 3, 2000. [https://www.co.fresno.ca.us/home/showdocument?id=18117] Accessed August 24, 2021.

Fresno County, 2021. General Plan Review and Zoning Ordinance Update. [https://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/development-services-division/general-plan-review-zoning-ordinance-update] Accessed August 24, 2021.

4.13 Mineral Resources

This section identifies and evaluates issues related to Mineral Resources in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received scoping comments from the California Geologic Energy Management Division (CalGEM), formerly the Division of Oil, Gas, and Geothermal Resources (DOGGR) (Appendix A, *Scoping Report*).

4.13.1 Setting

4.13.1.1 Study Area

The study area for the analysis of potential direct impacts to mineral resources includes the Project site. For potential indirect effects, the study area includes a radius of approximately 2.5 mile around the Project site.

4.13.1.2 Environmental Setting

Geologic Environment

As described more fully in Section 4.8*, Geology, Soils, and Paleontological Resources*, the Project site is located on sedimentary deposits of the Great Valley geomorphic province. Surface geology at the site consists of Holocene-age and Pleistocene-age alluvial deposits.

Fresno County contains aggregate resources and high value commodities such as granite, marble, oil, coal, gold, silver, copper, mercury, chromium, and asbestos. Aggregate resources and chromium are the two primary mineral resources currently mined. (Fresno County 2021).

Mineral Resources Potential

The Mineral Resources Data System (MRDS), administered by the U.S. Geological Survey (USGS), provides data to describe metallic and nonmetallic mineral resources, including deposit name, location, commodity, deposit description, production status and references. To confirm the presence/absence of existing surface mines, closed mines, occurrences/prospects, and unknown/ undefined mineral resources within the study area, the preparers of this EIR reviewed the MRDS online database on behalf of the County (USGS 2021). No mineral resources or operations are located within the Project site boundary.

Based on the geologic setting, the only mineral resources with the potential to occur near the Project site are aggregate resources. Alluvial geologic units in the region are potential sources of sand and gravel that could have value as a mineral resource commodity. Because sand and gravel are low-value, high-volume resources, the economic value and feasibility of developing them is predicated on the existence of high local demand from the construction industry. The closest active producer of sand and gravel is identified in the MRDS online database as being located about 10 miles south of the Project site on South Derrick Avenue west of Interstate 5 (USGS 2021).

There are no active mining claims within 2.5 miles of the Project site, nor is there any locatable mineral activity within the Project site boundary (USGS 2021). Based on the geological environment and historical trends, the potential for occurrence of locatable minerals is low within the surrounding area. According to review of the MRDS online database, metallic resources and occurrences (such as mercury, gold, copper, and chromium) are restricted to the Coast Ranges to the west and the Sierra Foothills to the east (USGS 2021). Numerous land sections within the mountainous areas have active mining claims. However, none of these resources occurs within 30 miles of the Project site and they are unlikely to be found within the geologic units that underlie the site or surrounding area. CalGEM indicates that there are no known oil or gas wells present within the Project site (Appendix A).

Sand and gravel deposits are ubiquitous throughout the Quaternary geologic deposits near the Project site and throughout the region (USGS 2021 and DOC 2000). There are several producers of sand and gravel approximately 10 miles west of the Project site, and many more within the Fresno Production-Consumption Region approximately 30 miles to the east (USGS 2021). None of the past or current locations of sand and gravel production intersects the Project site.

Mineral Land Classification under the Surface Mining and Reclamation Act

The State Surface Mining and Reclamation Act of 1975 (SMARA), as amended, mandated the development of mineral land classifications to help identify and protect mineral resources in areas within the state that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. After classification of mineral resource areas, SMARA provided for the designation of lands containing mineral deposits of regional or statewide significance. In addition, SMARA and its implementing regulations govern the reclamation of mineral lands. In compliance with SMARA, the State Mining and Geology Board established Mineral Resources Zones (MRZs) to classify lands that contain mineral deposits. According to maps of MRZs within Fresno County, the Project site is not located within an MRZ (Fresno County 2000 and 2021).

4.13.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern mineral resources on or near the Project site.

State

State Surface Mining and Reclamation Act of 1975

SMARA (Pub. Res. Code §2710 et seq.) mandated the initiation by the State Geologist of mineral land classification to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board (SMGB) to designate lands containing mineral deposits of regional or statewide significance. Mineral lands are mapped according to jurisdictional boundaries (e.g., counties), mapping all mineral commodities at one time in the area, using the California Mineral Land Classification System (DOC 2000). The

objective of the classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or regional significance are available when needed. The Project site is not classified by the SMGB as being located within a known mineral resource area (Fresno County 2000, 2021).

Local

Fresno County General Plan

The Fresno County General Plan Open Space and Conservation Element includes goals and policies intended to preserve the future availability of mineral resources in the County and to promote the orderly extraction of mineral resources in the County while minimizing the impact of these activities on surrounding land uses and the natural environment (Fresno County 2000). Relevant policies from this planning document include:

> ***Policy OS-C.1:*** The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.
>
> ***Policy OS-C.7:*** 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.10:*** The County shall not permit land uses that threaten the future availability of mineral resource or prelude future extraction of those resources.
>
> ***Policy OS-C.12:*** 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.

4.13.2 Significance Criteria

The Project would result in significant impacts to mineral resources if it would:

a) 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;

b) 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.

4.13.3 Direct and Indirect Effects

4.13.3.1 Methodology

Mineral resources effects of the Project and alternatives are evaluated by identifying whether known mineral resources of statewide, regional, or local importance occur within the Project site and, if so, assessing the extent to which the Project would result in the loss of availability of these resources.

4.13.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would have no impact on Mineral Resources.

Criterion a) Whether the Project would 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.

The Project site is not located on lands classified as MRZs by the State, nor is it zoned for or immediately adjacent to lands designated as a mineral resource zone by the Fresno County General Plan. Additionally, there are no active mining claims within 2.5 miles of the Project site; no active oil or gas fields are located closer than approximately 25 miles from the Project site. As a result, the Project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources. Based on the absence of historical surface mining in the area, the potential for surface mining at the site is considered low. As such, the Project would not result in the loss of availability of a known mineral resource and no impact related to this criterion would result. **(*No Impact*)**

Criterion b) Whether the Project would 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.

The Project site is not located on land designated for mineral resources by the Fresno County General Plan (Fresno County 2000, 2021). Implementation of the Project would result in no impact related to the loss of a locally important mineral resource recovery site. ***(No Impact)***

PG&E Infrastructure

To interconnect the Project with the electrical grid, PG&E would extend an existing 230 kV gen-tie line by up to 0.2 mile to connect with the Project's proposed substation. The mineral resources that occur in this area are similar to those underlying the rest of the Project site, and state and local mineral land classifications are the same as those for the solar facility, as determined in the EIR for the Tranquillity Solar Project (Fresno County 2014). Similar to the Project, no impact would result from the proposed PG&E infrastructure related to the loss of availability of a mineral resource of state or regional significance or to the loss of availability of a locally-important mineral resource recovery site. The combined impacts of the Project and PG&E infrastructure would be less than significant.

4.13.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Under Alternative 1, a Reduced Acreage Alternative, the overall footprint of the solar facility would be reduced by 20 percent compared to the Project. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. As the site is

not designated for mineral resources by the Fresno County General Plan, implementation of Alternative 1 (as with the Project) would not result in impacts with respect to mineral resources.

No Project Alternative

If the No Project Alternative were to be implemented, none of the proposed solar, battery storage, gen-tie line, or related facilities would be constructed, operated or maintained. Nor would decommissioning occur associated with the Project on the site. No excavation for foundations or other Project-related ground disturbance would occur. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Mineral Resources.

4.13.4 Cumulative Analysis

Because neither the Project nor the alternatives would have any impact on Mineral Resources, neither the Project nor the alternatives could cause or contribute to any cumulative impact.

4.13.5 References

California Department of Conservation (DOC), 2000. California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Lands.

Fresno County, 2014. Tranquillity Solar Generating Facility Project, Final Environmental Impact Report. September 2014.

Fresno County, 2000. Fresno County General Plan. Adopted October 3, 2000.

Fresno County, 2021. General Plan Review and Revision, General Plan Background Report, Public Review Draft. July 2021.

U.S. Geological Survey (USGS), 2021. Mineral Resources Data System: U.S. Geological Survey. [https://mrdata.usgs.gov/mrds/] Accessed August 30, 2021.

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4.14 Noise

This section identifies and evaluates issues related to Noise and Acoustics in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments pertaining to Noise and Acoustics (see Appendix A, *Scoping Report*).

This analysis is based in part on the Noise Technical Report prepared by Dudek for the Project on behalf of the Applicant (Appendix J, *Noise and Vibration*). The preparers of this EIR independently reviewed this and other materials prepared by or on behalf of the Applicant and determined them to be suitable to inform (in combination with other materials included in the formal record) the preparation of this Draft EIR (ESA 2020, 2021a).

4.14.1 Setting

4.14.1.1 Study Area

The study area for evaluation of noise and vibration impacts from the Project encompasses the Project site and the nearest potentially affected sensitive receptors to the proposed facilities. Applying a perimeter extension of 1 mile in all directions around the Project site conservatively captures areas of potential impact taking into account attenuation with distance. Beyond this distance, noise generated by the Project would be indistinguishable as an element of the ambient conditions.

4.14.1.2 Environmental Setting

Noise and Acoustics Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Acoustics is the field of science that deals with the production, propagation, reception, effects, and control of sound. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation (or the speed by which the wavefront of the soundwave passes through a medium), and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). See **Figure 4.14-1** for examples.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a specified period of time. A noise level is a measure of noise for a given period of time. However, noise levels rarely persist consistently over a long period of time. In fact, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, horns, sirens) makes community noise constantly variable throughout a day.

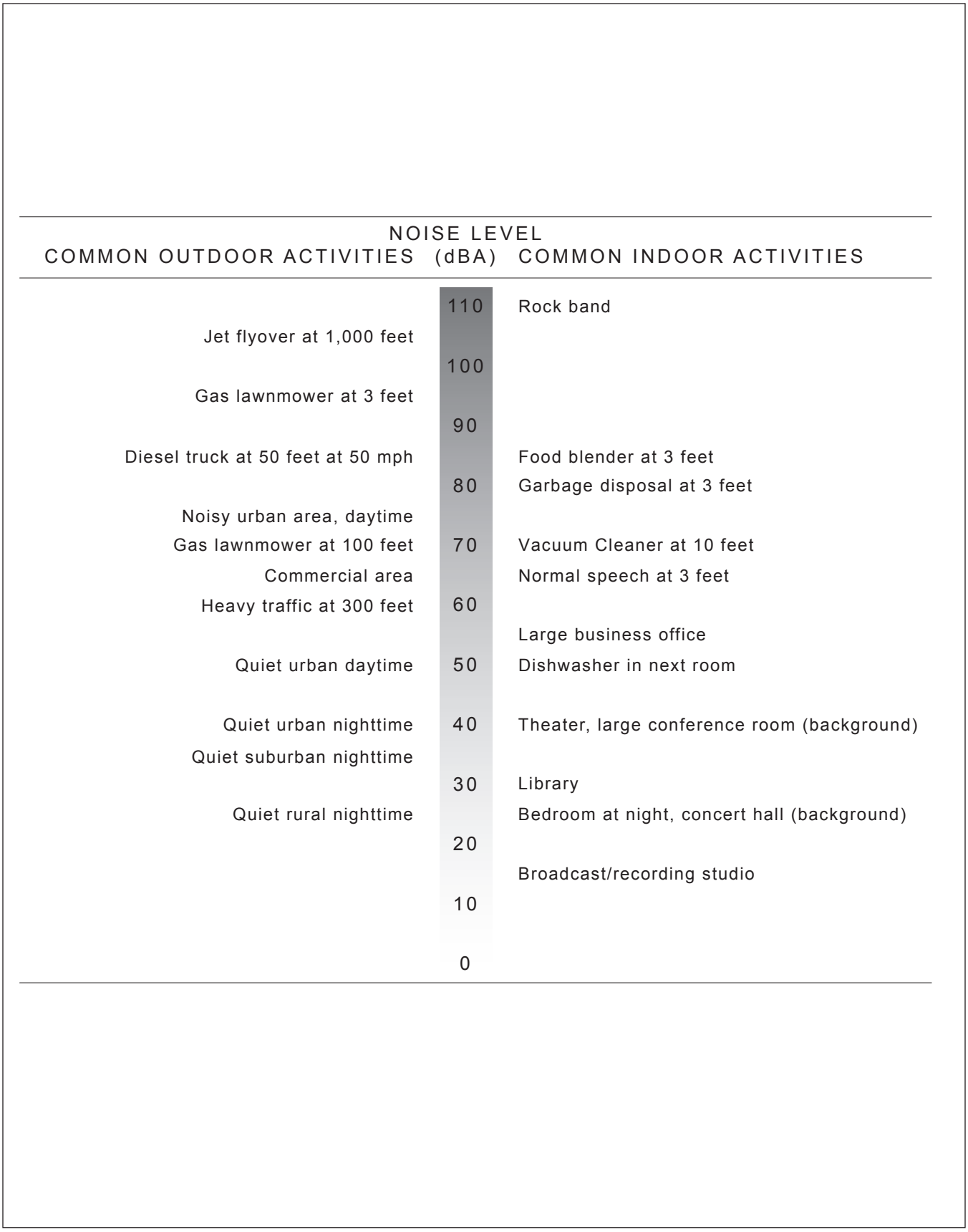
These successive additions of sound to the community noise environment vary the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. Noise descriptors discussed in this analysis are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

CNEL: The Community Noise Equivalent Level (CNEL) or the energy average of the A-weighted sound levels occurring during a 24-hour period and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels in the evening and at night ("penalizing" evening and nighttime noises) to take into account the greater annoyance of nighttime noises. The CNEL adds a 5-dBA *penalty* for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to the 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

L_x: The sound level that is equaled or exceeded x percent of a specified time period. The L_{50} represents the median sound level (i.e., the noise level exceeded 50 percent of the time, or 30 minutes out of an hour).

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.



SOURCE: Caltrans, 2013

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Figure 4.14-1
Typical A-Weighted Sound Levels

ESA

Effects of Noise on People

There is no universally accepted way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans 2013a):

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a barely-perceivable difference when the change in noise is perceived but does not cause a human response (such as annoyance or nuisance);
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response (such as hearing damage or psychological effects).

These relationships occur in part because of the logarithmic nature of sound and the decibel system. For example, a ruler is a linear scale: it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A logarithmic scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1, 10, 100, 1,000, 10,000, etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss depends on whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including temporarily stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In many cases, noise attenuation from a point source increases by 1.5 dBA from 6.0 dBA for a total attenuation rate of 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground

attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees.

Widely distributed noise such as from a street with moving vehicles (a "line" source) typically attenuates at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases by 1.5 dBA to 4.5 dBA for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects.

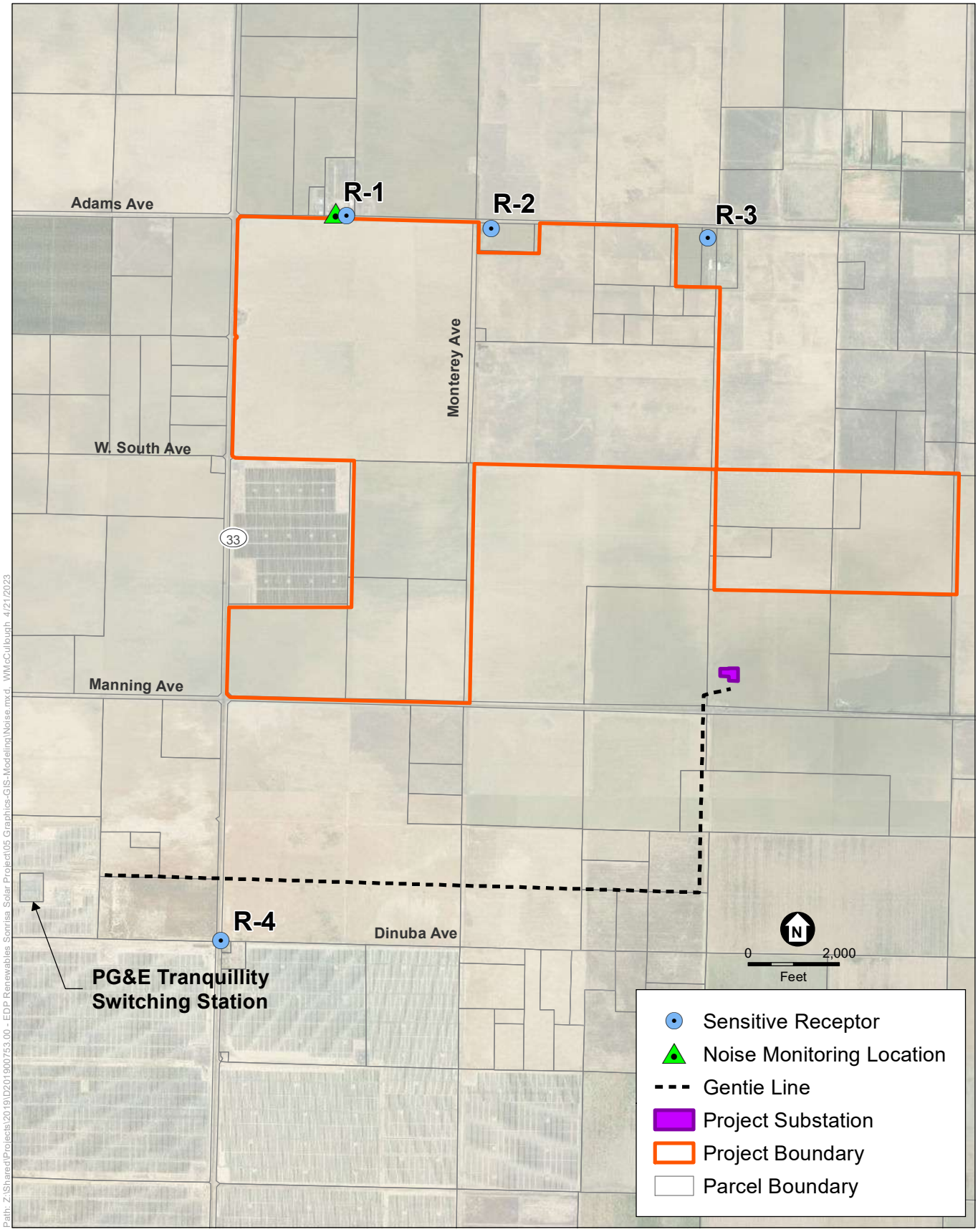
Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. Although PPV is appropriate for evaluating building damage, it is less suitable for evaluating human response. Human response is better related to the average vibration amplitude. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to express RMS. The decibel notation acts to compress the range of numbers required to describe vibration, as numbers can differ over several orders of magnitude. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration (FTA 2018).

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate also are sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive.

Scattered rural residences exist in the vicinity of the Project site. There are two residences within 1 mile of the Project site along West Adams Avenue and one small residential cluster along State Route 33 (SR 33; South Derrick Avenue). Traffic along these roadways is the primary noise source at these residential properties. These noise-sensitive receptors are shown on **Figure 4.14-2**, in relation to the Project boundaries and the gen-tie extension. The nearest noise sensitive receptors are scattered rural residences in the vicinity of the Project site, primarily adjacent to portions of the northern site boundaries. One of the two closest sensitive receptors to the Project site (R-1) is a residence located approximately 185 feet north of the Project site boundary, on the



SOURCE: Dudek, 2020

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Figure 4.14-2
Noise Monitoring and Sensitive Receptor Locations

north side of West Adams Avenue, approximately 2,000 feet east of SR 33. The other closest sensitive receptor (R-2) is located at the southeast corner of the intersection of West Adams Avenue and South Monterey Avenue. This residence is approximately 50 feet east of S. Monterey Avenue (which may be used for construction access) and 185 feet from the Project site boundary. The other closest sensitive receptor is near the northern Project boundary, across South Monterey Avenue. An additional residence (R-3) exists on a parcel to the south of West Adams Avenue, adjacent to the northeastern boundary of the Project site. The residence on this parcel is located approximately 750 feet from the closest Project site boundary.[1]

The closest receptors to the south of the Project are a cluster of residences in the southeastern quadrant of the intersection of West Dinuba Avenue and SR 33 (South Derrick Avenue). These residences (R-4) are approximately 1 mile south of the Project's southwestern boundary. These are also the closest receptors to activities associated with PG&E interconnection are approximately 4,100 feet east of the Tranquillity Switching Station. These single-family residences are the focus of the analysis presented in this section. The next closest receptors to the east and west are residences located more than a mile away from the Project site boundary and are not likely to be affected by noise or vibration from the Project site.

Existing Ambient Noise Environment

A long-term noise measurement was completed adjacent to West Adams Avenue to characterize existing ambient noise levels in the vicinity of the Project site where the ambient noise levels are primarily the result of traffic along West Adams Avenue. The 24-hour noise measurement was conducted between 9:00 a.m. on December 7, 2020, and 9:00 a.m. on December 8, 2020, along the West Adams Avenue northern frontage between South Derrick Avenue on the west and South Monterey Avenue on the east. See Figure 4.14-2 for the noise measurement location. The measurement was conducted 15 feet from the edge of pavement (25 feet from the roadway centerline) and was made using a Soft dB Piccolo 3 integrating sound level meter equipped with a half-inch pre-polarized condenser microphone with pre-amplifier. The CNEL at this location was calculated to be 62 dBA with daytime hourly L_{eq} measurements ranging between 54 and 64 dBA and nighttime hourly L_{eq} measurements ranging between 37 and 61 dBA. Ambient noise levels at receptors R-1 and R-2 (shown in Figure 4.14-2) along West Adams Avenue closest to the Project site may be slightly lower than these measured levels given the increased distance of these locations from SR 33, which has the greatest traffic volumes and associated noise levels of any roadway in the study area (see Section 4.18.1.2). Ambient noise levels at receptor R-3 are likely higher than the measured noise levels since this location is immediately adjacent to SR 33. Refer to Appendix J for the 24-hour measurement data and calculation of CNEL.

4.14.1.3 Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while

[1] The Noise Technical Report prepared for the Project identifies this residence at a distance of 315 feet from the nearest Project boundary; however, this EIR analysis has been revised to consider the residence at a distance of 750 feet from the nearest Project boundary.

regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans tend to identify general principles intended to guide and influence development plans; local noise ordinances and codes establish standards and procedures for addressing specific noise sources and activities.

Federal

Federal Transit Administration and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA (2006) Transit Noise and Vibration Impact Assessment Manual routinely are used for projects under review by local jurisdictions that have not adopted their own vibration impact standards. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions and to other types of projects. The FTA's threshold of architectural damage for conventional sensitive structures from groundborne vibration is measured as 0.2 inches/second PPV or 94 VdB (decibel units of 1micro –inch/second). The FTA measure of human annoyance at residential uses is 72 VdB for "Frequent Events," or more than 70 vibration events of the same kind per day; 75 VdB for "Occasional Events," or 30 to 70 events each day; and 80 VdB for "Infrequent Events," or fewer than 30 vibration events of the same kind per day.

Occupational Safety and Health Act

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §651 et seq.), the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) adopted regulations (29 CFR §1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list limits on noise exposure levels as a function of the amount of time during which the worker is exposed, as shown in **Table 4.14-1**. The regulations further specify requirements for a hearing conservation program (§1910.95(c)), a monitoring program (§1910.95(d)), an audiometric testing program (§1910.95(g)), and hearing protection (§1910.95(i)). There are no federal laws governing community noise.

TABLE 4.14-1
OSHA-PERMISSIBLE NOISE EXPOSURE STANDARDS

Duration of Noise (hours/day)	A-Weighted Noise Level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 or less	115

SOURCES: USEPA 1974, 29 CFR §1910.95 (Table G-16).

State

Government Code Section 65302 encourages counties and cities to implement a noise element as part of the general plan. In addition, the California Governor's Office of Planning and Research has developed guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

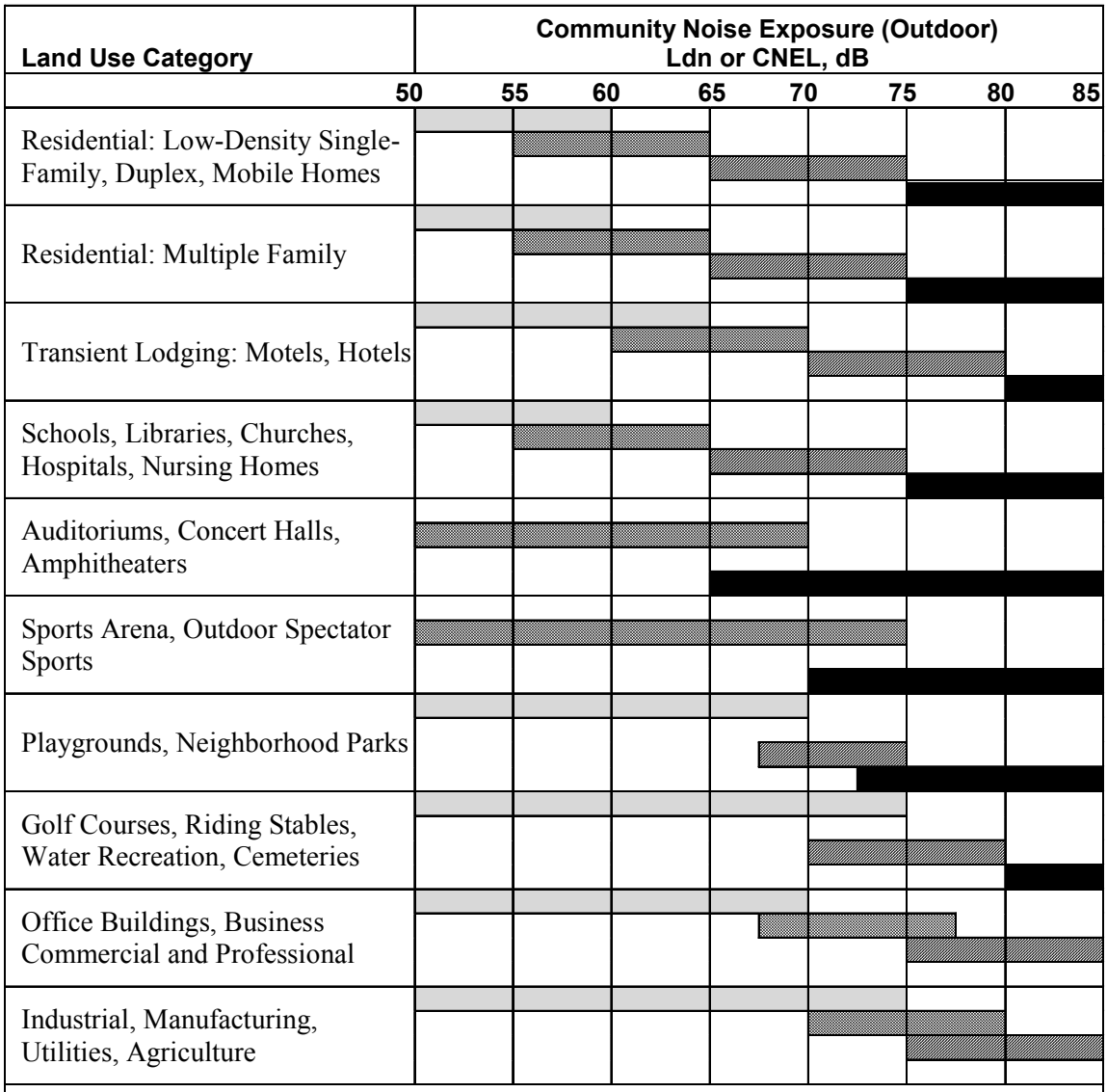
The California Occupational Safety and Health Administration (Cal-OSHA) has published Occupational Noise Exposure Regulations (9 Cal. Code Regs. §§5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards described above.

Fresno County

Fresno County General Plan Health and Safety Element

The Fresno County General Plan Health and Safety Element establishes Countywide land use compatibility guidelines that are applicable to the Project. For example, the maximum allowable noise exposure level for residential land use is 60 dBA CNEL (Fresno County 2000). The following Fresno County General Plan policies also are relevant to the Project:

> ***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.
>
> ***Policy HS-G.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-1: "Land Use Compatibility for Community Noise Environments;" [Chart HS-1 is presented here as **Figure 4.14-3**.]
>
> 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.
>
> ***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.
>
> ***Policy HS-G.6:*** The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.
>
> ***Policy HS-G.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." [Chart HS-1 is presented here as **Figure 4.14-3**.]



SOURCE: Fresno County 2000 General Plan

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Figure 4.14-3

Community Noise Environment

Fresno County Noise Ordinance

The Fresno County Noise Ordinance (Chapter 8.40 of the Fresno County Development Code) applies to noise sources that can be regulated by Fresno County, such as equipment related to commercial and industrial land uses. **Table 4.14-2** summarizes the County's exterior noise standards that would be applicable to the Project. As indicated in the table, it would be unlawful for Project-related on-site operation and/or maintenance noise levels to exceed an L_{50} of 50 dBA during daytime hours at the nearby residences.

TABLE 4.14-2
FRESNO COUNTY EXTERIOR NOISE LEVEL STANDARDS

Cumulative min/hr (Lx)	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
30 (L_{50})	50	45
15 (L_{25})	55	50
5 ($L_{8.3}$)	60	55
1 ($L_{1.7}$)	65	60
0 (L_{max})	70	65

NOTE:
In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

SOURCE: Fresno County 1978.

In addition to the exterior noise standards, Noise Ordinance Section 8.40.90, *Electrical Substations*, identifies a noise level limit of 50 dBA for electrical substations when measured 50 feet from an affected residence (Fresno County 1978).

Section 8.40.060 of the ordinance exempts noise sources associated with construction activities from the standards provided they take place after 6:00 a.m. and before 9:00 p.m. on Monday through Friday, or after 7:00 a.m. and before 5:00 p.m. on weekends. Chapter 8.40.060(g) of the Fresno County Noise Ordinance further provides that noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities are exempt. In addition, if a new groundwater well is constructed as part of the Project, Chapter 8.40.060(h) would exempt noise sources associated with the drilling of water wells from the provisions of the County Noise Ordinance.

4.14.2 Significance Criteria

The Project would result in a significant impact to noise if it would:

a) Generate 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;

b) Generate excessive groundborne vibration or groundborne noise levels; or

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 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

4.14.3 Direct and Indirect Effects

4.14.3.1 Methodology

This analysis evaluates potential noise and vibration impacts of the Project and alternatives based on review of sensitive receptor locations, ambient noise levels, and projected noise levels that would be associated with construction, operation, maintenance, and decommissioning of the Project and alternatives. Impact discussions are based, in part, on the modeled noise and vibration levels of the Project as presented in the noise impact analysis (Appendix J).

Short-Term Construction and Decommissioning Impacts

Short-term noise level increases from construction and decommissioning activities would cause significant impacts if the activities would conflict with local policies or standards. Project-related construction activities taking place between 6:00 a.m. and 9:00 p.m. Monday through Friday and between 7:00 a.m. and 5:00 p.m. on weekends would be exempt from standards in the Fresno County Noise Ordinance. Any construction activities taking place outside these hours would be considered to result in a significant impact if resulting noise levels at the receptors would exceed the Fresno County exterior noise standard of 45 dBA L_{eq} for nighttime.

A quantitative analysis of the construction noise using the FHWA's Roadway Construction Noise Model (RCNM) in this analysis. Although the model was developed by the FHWA, RCNM is often used for non-roadway projects because the same types of construction equipment used for roadway projects are also used to construct other project types. Input variables for RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of each hour the equipment typically works per day), and the distance between the construction activity and noise-sensitive receivers. No topographical or structural shielding was assumed in the modeling of Project construction noise (i.e., the receivers are modelled with no obstacles to the travel of sound between the construction activity and receiver location, which is a worst-case assumption). Decommissioning is conservatively assumed to be similar in extent of noise producing activities as construction activities and, consequently, all construction-related impacts and mitigation measures also apply to decommissioning.

Long-Term Operation and Maintenance Impacts

Long-term operation and maintenance noise impacts would be considered significant if Project-related noise would exceed the Fresno County exterior noise standards of 45 dBA L_{50} during nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.) or 50 dBA L_{50} during daytime hours (i.e., 7:00 a.m. to 10:00 p.m.). For most common noise sources, L_{50} can be interpreted as close to the L_{eq} metric. Therefore, if the Project would generate noise levels in excess of 50 dBA L_{eq} during the daytime or 45 dBA L_{eq} during the nighttime, such noise generation would constitute a significant noise impact. In addition, the Fresno County General Plan specifies CNEL-based community noise exposure levels that consider the contributions of daytime and nighttime noise levels. The maximum allowable noise exposure level for residential land uses is 60 dBA CNEL.

While the County's noise ordinance standards are established in terms of bright line thresholds, CEQA also requires the consideration of a project-caused increase over ambient noise levels, consistent with the decision in King and Gardiner Farms, LLC v. County of Kern (2020) 45 Cal.App.5th 814. While the CEQA Statutes and Guidelines Appendix G threshold for item (a) does not define the term "substantial" relative to a substantial increase in noise, as described in Section 4.14.1.2, a 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response (such as hearing damage or psychological effects). Therefore, this analysis considers any Project-related operational noise that would result in an increase of 10 dBA or higher over ambient conditions at a sensitive receptor location to be a significant impact.

Vibration Impacts

The County has not identified a quantitative vibration threshold to evaluate vibration impacts from construction or operation. Therefore, this analysis assumes that the Project would result in a significant construction vibration impact if residential buildings would be exposed to vibration levels equivalent to or higher than FTA's 0.2 in/sec PPV vibration threshold for architectural damage of conventional sensitive structures. It is assumed that each pile driver would install less than 30 piles per day and would not work in the immediate vicinity of each other; therefore, a significant impact would occur if residential uses would be exposed to the threshold of human annoyance of 80 VdB for "Infrequent Events," or fewer than 30 vibration events of the same source per day (FTA 2018). The FTA impact assessment procedures and criteria are routinely used for projects under review by local jurisdictions that have not adopted their own vibration impact standards.

4.14.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with mitigation incorporated for criterion a), a less-than-significant impact for criterion b), and no impact for criterion c). Impacts specifically attributable to the PG&E infrastructure would be slightly different than the impacts of the Project as a whole, given the distance between the proposed PG&E work and the nearest sensitive receptors. Construction and operation of the PG&E Infrastructure would result in a less-than-significant impact for criteria a) and b), and no impact for criterion c). No mitigation measures would apply to construction or operation of the PG&E Infrastructure.

Criterion a) Whether the Project would generate 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.

Impact 4.14-1: The Project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (*Less than Significant with Mitigation Incorporated*)

Construction and Decommissioning

Construction of the Project is expected to last up to 14 months. Project construction would consist of several phases, including grading and site preparation, trenching, solar photovoltaic (PV) system assembly and installation, battery energy storage system installation, gen-tie installation, and construction of other on-site structures including fencing and potentially a new groundwater well. Construction scenario assumptions used in this analysis, including phasing, equipment mix, and vehicle trips, were based on information provided by the Applicant and are included in Appendix J. Construction equipment would include standard equipment such as graders, scrapers, backhoes, loaders, dozers, water trucks, portable generators, cranes, and other common types of construction equipment. Metal piers driven into the ground by a pile-driving machine would support the proposed single-axis tracking systems. Installing solar panels would require driving steel piles about 6 to 10 feet into the ground.

Project construction would generate noise that could expose nearby sensitive receptors (i.e., residences) to elevated noise levels that may disrupt sleep, concentration, and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, time of day construction activities would occur, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Construction noise levels generated by equipment would also vary significantly depending on several factors such as the type and age of equipment, specific equipment manufacture and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers. The maximum noise levels for typical construction equipment at a reference distance of 50 feet are presented in **Table 4.14-3**. As shown, the maximum L_{max} noise levels at 50 feet would range up to 101 dBA for the type of equipment normally used for this type of project. The typical operating cycles for construction equipment involve intermittent full power operation followed by operation at lower power settings. Thus, L_{eq} noise levels associated with construction equipment are lower than the L_{max} noise levels indicated in Table 4.14-3.

Noise from construction equipment generally exhibits acoustical characteristics of point sources. Assuming no additional attenuation from topography or intervening structures, noise from construction equipment would attenuate at a rate of 6 dBA per doubling of distance from the source. Using the FHWA's RCNM, construction noise levels at the two nearest noise-sensitive receptors identified in Figure 4.14-2 were estimated and are summarized in **Table 4.14-4**. The noise levels shown in Table 4.14-4, take into account operation of multiple pieces of construction equipment simultaneously for the L_{eq} results. The modeling conservatively assumed that all pieces of construction equipment associated with the given activity would operate simultaneously for the duration of that activity. Additionally, it was conservatively assumed that there would be no shielding effects due to intervening structures and buildings along the propagation path from the site to sensitive receptor locations.

TABLE 4.14-3
MAXIMUM NOISE LEVELS GENERATE BY TYPICAL CONSTRUCTION EQUIPMENT

Construction Equipment	Acoustical Use Factor (%)	L_{max} at 50 feet, dBA	
		Equipment Spec Level	Actual Measured Level
Augur Drill Rig	20	85	84
Backhoe	40	80	78
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flatbed Truck	40	84	74
Front-end Loader	40	80	79
Generator	50	82	81
Grader	40	85	NA
Man Lift	20	85	75
Pickup Truck	40	55	75
Roller	20	85	80
Scraper	40	85	84
Tractor	40	84	N/A
Vibratory Pile Driver	20	95	101
All Other Equipment > 5 horsepower	50	85	NA

NOTE:
NA = Not Available
SOURCE: FHWA 2008.

Input and output data from the RCNM modeling for construction noise is included in Appendix J. As shown in Table 4.14-4, noise levels at the nearest residence would range from approximately 66 to 90 dBA L_{eq} when construction would take place at or near the Project site boundary nearest to the receptor.

As shown in Table 4.14-4, construction-related noise levels from the Project site could reach up to 90dBA L_{eq} at receptors R-1 and R-2. The greatest estimated hourly L_{eq} is not the result of any particular equipment or activity, but rather the cumulative noise of widespread activity on the Project site. The noise level values in Table 4.14-4 are conservative in that they assume work would occur near the Project boundary adjacent to the closest residences. In reality, use of construction equipment during each phase would be distributed temporally as well as spatially throughout the 2,000-acre Project site thereby reducing the L_{eq} level sensitive receptors would be exposed to. In addition to the values shown for the closest sensitive receptor locations in Table 4.14-4, gen-tie construction noise levels at 1 mile near receptor R-4 would be expected to be less than 37 dBA L_{eq} (ESA 2020b).

TABLE 4.14-4
OUTDOOR CONSTRUCTION NOISE LEVELS BY PHASE AT CLOSEST NOISE-SENSITIVE RECEPTORS

Construction Phase	Equipment Used	Estimated Construction Noise Level at Sensitive Receptors (dBA, Leq)[a]	
		Receptors R-1 and R-2 at 185 feet	Receptor R-3 at 750 feet
Fence installation	Front loader with auger (1), Forklift (1), Flatbed truck (1)	70	57
Site Preparation and clearing/grading	Water trucks (4), Grader (2), Bulldozer (1), Scraper (1), Roller (2), Sheepsfoot roller (2), Tractor with mower attachment (1)	77	64
Underground work (trenching)	Excavator (2), Trenching machine (2), Sheepsfoot roller (1), Water truck (1), Soil mix rig (1), Forklift (1) Vibratory pile driver (5)	90	77
System installation	Forklift (10), Small crane (1), Dump truck (5), Vibratory pile driver (5), Pickup truck (1), Water truck (2), Generator (6)	89	77
Gen-tie installation	Line truck with spool trailer (1), Pick-up (3), Boom truck with bucket (1)	66	NA
Energy Storage System (ESS) construction	Backhoe (1), Small Crane (1), Pickup truck (5), Forklift (4)	75	63
Testing, commissioning, site cleanup	Pickup Truck (10), Water truck (1), Grader (2), Front-end loader (1)	75	62

NOTE:

a The Noise Technical Report identified receptor locations R-1 and R-2 as being 165 feet from the Project boundary and receptor location R-3 as 315 from the Project boundary. The noise levels for these receptor locations have been revised to account for 185 feet for R-1 and R-2 from the nearest Project boundary instead of 165 feet, and 750 feet for R-3 from the nearest Project boundary instead of 315 feet.

SOURCES: Appendix J (Table 11), ESA 2021b.

As discussed earlier, noise from construction activities would be exempt from the Fresno County General Plan noise policies and the Fresno County Noise Ordinance standards if the activities would occur between the hours of 6:00 a.m. and 9:00 p.m. on weekdays, or 7:00 a.m. and 9:00 p.m. on Saturdays and Sundays. Construction would occur primarily during these hours. If work outside these hours is determined to be necessary, the nighttime L_{eq} significance threshold of 45 dBA that is based on the Fresno County Exterior Noise Level Standard would be exceeded at the nearest sensitive receptors when nighttime work is required near the northern Project boundary. This would be a potentially significant impact. To reduce this impact, Mitigation Measure 4.14-1 is recommended.

Access to the Project site for construction equipment, supplies, and workers would be achieved from I-5; SR 33, which is locally also identified as South Derrick Avenue; W. Manning Avenue; and W. Adams Avenue. As described in Section 4.18, *Transportation* (see Table 4.18-2), the magnitude of increases on I-5 is within the range of typical daily variation in traffic levels (usually on the order of ±10 percent) that might be expected on the major roadways serving the Project site, and traffic noise conditions on I-5 would remain substantially similar to current conditions. On SR 33 and W. Manning Avenue, the magnitude of increases in traffic volume

would be approximately 20 percent and 29 percent, respectively, which would be less than doubling of traffic. A doubling of the traffic would approximately result in a 3 dBA increase. Therefore, the addition of Project traffic would result in less than 3 dBA increases in traffic noise along SR 33 and W. Manning Avenue, which would not likely be a perceivable difference and would not cause a human response such as annoyance or nuisance (Caltrans 2013a). On W. Adams Avenue, the magnitude of increase in traffic volume would be approximately 276 percent, which would be nearly three times the existing traffic. A tripling of the traffic would approximately result in a 5 dBA increase in ambient noise levels. A change in noise level of at least 5-dBA is required before any noticeable change in human response would be expected (Caltrans 2013a); therefore, the residences along W. Adams Avenue may experience annoyance or nuisance due to Project-related construction traffic noise.

However, the vast majority of construction traffic is anticipated to occur only during the day (with the potential exception of delivery of certain oversized components), which would cause the least disruption to sleep or relaxation patterns. Due to the temporary nature of the traffic noise increase and the construction exemption in the County Noise Ordinance, impacts related to construction traffic noise would be less than significant.

Activities associated with decommissioning and site restoration are conservatively assumed to be similar in scale and magnitude as construction activities and, consequently, all construction-related impacts also would apply to decommissioning and site restoration at the end of the assumed Project life.

Mitigation Measure 4.14-1: Noise Reduction for Construction Activities

Prior to issuance of construction permits for the proposed project, the Project Owner shall submit to the County for approval a Construction Noise Reduction Plan to be implemented by all contractors as a condition of contract. Contents of the Plan should include at a minimum:

- Maintain all construction tools and equipment in good operating order according to manufacturers' specifications;
- Limit use of major excavating, pile driving, and earth-moving machinery to daytime hours;
- Equip any internal combustion engine used for any purpose on the job or related to the job with a properly operating muffler that is free from rust, holes, and leaks;
- For construction devices that utilize internal combustion engines, ensure the engine's housing doors are kept closed, and install noise-insulating material mounted on the engine housing consistent with manufacturers' guidelines, if possible;
- Limit possible evening and nighttime shift work to the southern and/or western portions of the Project site conducting low noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment; and
- Utilize a Complaint Resolution Procedure to address any noise complaints received from residents.

Significance after Mitigation: Less than Significant. The above identified measure would address the potential for nighttime construction noise impacts by limiting the types of activities that might occur during nighttime hours to those least likely to generate substantial noise, thus reducing the level of significance. Due to the infrequent nature of construction activities requiring construction outside the hours permitted by the Fresno County noise ordinance, with the implementation of Mitigation Measure 4.14-1, the temporary increase in noise due to construction is considered to be a less than significant impact.

Operation and Maintenance

The primary on-site noise sources from operation and maintenance (O&M) would be associated with the inverters, transformers, and solar panel single-axis trackers (if trackers are used). The Project includes a battery energy storage system (ESS) that would provide electrical storage and an O&M building for on-site employees. As described in the Project Description, two options are being contemplated for the ESS. The ESS would be either AC-coupled or DC coupled. The AC configuration for the ESS and O&M building would be a centralized climate-controlled enclosure located adjacent to the on-site substation central to the Project site. The AC ESS equipment would be enclosed in a structure, container boxes, or trailers. The ESS is expected to include heating, ventilation and air conditioning (HVAC) units, as would the O&M building. For a DC-coupled ESS, the batteries would be distributed throughout the solar arrays and connect to multiple solar inverters, MV transformers, and MV collection circuits.

Although the Project is a solar facility that would be active and operational primarily during daytime hours, the inverters and step-up transformer may operate during the early morning hours. In addition, HVAC equipment for the ESS containers could operate at times in the overnight period. Therefore, to provide the most conservation assessment of potential noise impacts and to account for a "worst-case" scenario, the County's nighttime (10:00 p.m. to 7:00 a.m. [Fresno County 2017]) noise level standard for stationary source noise is used to gauge significance. According to Table 4.14-2, the Exterior Noise Level Standards specify an L_{50} standard 45 dBA at residential land uses during nighttime hours (10:00 p.m. to 7:00 a.m.) and 50 dBA for daytime hours. In addition, operational noise is also compared to the County's maximum allowable noise exposure level for residential land uses of 60 dBA CNEL and to the recorded ambient noise levels in the Project area identified in Section 4.14.1.2.

Trackers

Noise from the tracker motors that would make brief, incremental adjustments to the angle of the photovoltaic panels throughout the day is not included in the analysis because their noise levels are very low (approximately 37 dBA at a distance of 10 feet), and they operate for only a few seconds at a time. Therefore, the noise levels from the tracker motors would be negligible.

Inverters and Medium Voltage Transformers

The exact model of inverter and medium voltage transformers to be used have not yet been specified; therefore, noise levels from representative equipment was assumed in this analysis. Noise from an inverter/transformer pair at an operational solar facility similar in capacity to that which would be used for the Project was measured to be 56.3 dBA at a distance of 50 feet. An

array of 94 inverter/transformer pairs is expected to be spread across the site. Inverters and transformers are proposed to be installed outdoors, with no enclosures.

High Voltage Transformer

Based on the standards for transformers published by the National Electrical Manufacturers Association and the anticipated transformer capacity, the expected sound generation level for the main step-up generator (or Generator Step Up; GSU) is 59.7 dBA at 50 feet. It is assumed that there would be one GSU for the facility substation.

Energy Storage System and O&M Building

The ESS is anticipated to be comprised of batteries and bi-directional inverter units housed in containers or structures. Noise from the ESS would be created by the associated HVAC units employed to maintain acceptable operating temperatures within the containers. A total of 48 individual HVAC units were assumed to be required for the ESS component. The O&M building would also be assumed to include 2 individual HVAC units. Information from the vendor for a similar energy storage project indicates the HVAC unit that is supplied as standard equipment for these types of projects is a Daikin-McQuay air-cooled condenser units (Model 025D); it is assumed that the same model would be employed for the O&M building. The Daikin-McQuay Model 025D produces a sound pressure level of 80.8 dBA at a distance of 50 feet during full operation.

Combined Operational Noise Levels of Solar Facility at the Closest Sensitive Receptors

Using the Project's site plan and noise specifications for the noise-generating equipment detailed above, the operational noise levels from the Project were modeled at the identified noise sensitive receivers in the vicinity. The model used the published sound level for each piece of equipment; standard outdoor distance attenuation rates for point sources and hard-site conditions (most conservative) applied to the distance between each equipment location and the receiver locations; and, the logarithmic sum of the individual equipment noise levels at each of the closest sensitive receptor locations. **Table 4.14-5** shows the resultant noise levels at the nearest receptors due to the operation of onsite project equipment.

TABLE 4.14-5
OPERATIONAL NOISE LEVELS AT CLOSEST NOISE-SENSITIVE RECEPTORS

Receptor Description and Location[a]	Distance to Receptor from Project Component (feet)	Estimated Operational Noise Level (dBA, L_{eq})	Estimated Operational Noise Level (dBA, CNEL)[b]
Receptor R-1, north of Adams Avenue, and Receptor R-2, to the east of Monterey Avenue and south of Adams Avenue	185	37	44
Receptor R-3, residence to the south of Adams Avenue between Monterey and Merced[c]	750	29	36

NOTES:

a Refer to Figure 4.14-2 for receptor locations.
b Operational CNEL levels were estimated by Environmental Science Associates assuming the identified Leq levels are one-hour averages that would occur for each of the 24 hours per day.
c The Noise Technical Report identified this receptor location as being 315 from the Project boundary. The noise levels for this receptor location have been revised to account for a distance of 750 feet from the nearest Project component instead of 315 feet.

SOURCES: Appendix J (Table 13), ESA 2021b

The results in Table 4.14-5 show that the predicted operational noise would be less than the most restrictive County noise level standard of 45 dBA Leq at the nearest noise-sensitive receptors (the nighttime limit between 10:00 p.m. to 7:00 a.m., Fresno County 1978) as well as the County's maximum allowable noise exposure level for residential land uses of 60 dBA CNEL (Fresno County 2000). Ambient noise levels in the vicinity of the Project have been measured to be 62 dBA CNEL with daytime hourly Leq measurements ranging between 54 and 64 dBA and nighttime hourly Leq measurements ranging between 37 and 61 dBA (see Section 4.14.1.2). Because operational noise levels would be below the limits prescribed by the County Noise Element and County Noise Ordinance, and because operational noise levels would not represent an increase of 10 dBA or more compared to ambient noise levels, operational noise from Project equipment is considered to be a less-than-significant impact.

Operational Traffic Noise

The Project would be staffed by seven employees. Access to the Project site for employees is available directly from SR-33, which is locally also identified as South Derrick Avenue. This segment of SR-33 carries approximately 1,790 average daily trips (ADT). Seven employees would result in the generation of 14 ADT (one arrival trip and one departure trip) to this segment of SR-33, which would be a less than a one percent increase in the traffic volume. The operational traffic noise impact is therefore considered less than significant, as there would not be a discernible increase in roadway traffic noise as a result of project operation.

Gen-Tie Corona Noise

When a transmission line such as the proposed gen-tie is in operation, an electric field is generated in the air surrounding the conductors, forming a corona. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a hum. Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface. Therefore, audible noise from transmission lines is generally a foul-weather phenomenon that results from wetting of the conductor. The audible noise associated with a 230 kV line is approximately 40 dBA directly below the conductor (Clearway 2020). Therefore, noise levels from the Project's gen-tie lines at the nearest sensitive residential receptor located approximately 1 mile away would not be adudible and would also be less than the County's nighttime threshold of 45 dBA. Therefore, operational corona noise associated with the proposed gen-tie lines would not represent a substantial increase in ambient noise levels. The impact would be less than significant with no mitigation required.

Mitigation: None required.

Criterion b) Whether the Project would generate excessive groundborne vibration or groundborne noise levels.

Impact 4.14-2: The Project could expose people and/or structures to vibration levels. (*Less than Significant Impact*)

Construction, Decommissioning and Site Restoration

Temporary sources of groundborne vibration during land grading, trenching, pile driving, and other construction activities associated with the Project would be produced by the operation of heavy construction equipment. The construction equipment that would create the greatest vibration is the vibratory pile driver, followed by large and small bulldozers, loaded trucks, jackhammers, etc.

Vibration levels generated by vibratory pile drivers at a reference distance of 25 feet are shown in **Table 4.14-6**. The table also shows the predicted vibration levels from this equipment at the nearest residences 165 feet from the Project boundary. As mentioned above, these levels are based on the worst-case vibration producing equipment and it is expected that other vibration generating equipment proposed for Project construction would result in lower vibration levels.

TABLE 4.14-6
PROJECTED CONSTRUCTION VIBRATION LEVELS

Construction Activity	Vibration Metric	Reference Vibration Level at 25 feet	Vibration level at R-1 (185 feet)
Vibratory Pile Driving	Inches/sec (PPV)	0.65	0.04
Vibratory Pile Driving	VdB	104	79

SOURCES: ESA 2021b (based on Caltrans 2013b), FTA 2018.

As shown in Table 4.14-6, construction equipment with the highest vibration source level (e.g., a vibratory pile driver) generates vibration levels of 0.65 PPV in/sec at a distance of 25 feet. At a distance of 165 feet, this vibration level attenuates to 0.04 PPV in/sec at the nearest residence. Vibration levels at this receptor would not exceed the FTA building damage threshold of 0.2 PPV in/sec. As such, construction-related vibration associated with the Project would result in a less-than-significant impact with respect to building damage.

The attenuated levels associated with Project construction would also generate vibration levels below the 80 VdB FTA threshold for human annoyance at residential uses for “Infrequent Events.” or fewer than 30 vibration events of the same kind per day. As such, construction-related vibration associated with the Project would result in a less-than-significant impact.

Project construction would not have the potential to generate significant short-term groundborne vibration or noise at the noise sensitive receptors due to distance attenuation. Decommissioning activities would include the use of similar equipment as construction and would similarly not significantly impact nearby sensitive receptors. Therefore, groundborne vibration and noise impacts would also be less than significant for Project decommissioning and site restoration activities.

Operation and Maintenance

The Project would not include the use of large, rotating equipment during Project operation that would introduce any new sources of perceivable groundborne vibration. Other than fans that

could be incorporated for climate control of ESS enclosures, the Project would not include any equipment with moving parts that would generate perceivable vibration. In addition, operation and maintenance activities would not require the use of heavy equipment. Therefore, the Project has no potential to generate ground vibration levels greater than the 0.2 in/sec significance criterion for vibration. Thus, operational vibration impacts from the Project would be less than significant.

Mitigation: None required.

Criterion 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 2 miles of a public airport or public use airport, whether the project would expose people residing or working in the project area to excessive noise levels.

The Project would not include development of land uses near an airport influence area. There are no public airports or private airstrips within 2 miles of the Project site. The closest public airports to the Project site are the William Robert Johnston municipal airport in Mendota (8.5 miles north of the Project) and San Joaquin Airport (located 11 miles to the east of the Project). Therefore, there would be no impact with respect to exposure of people residing or working within the vicinity of a private airstrip or a public airport or public use airport in the project area. **(*No Impact*)**

PG&E Infrastructure

The PG&E infrastructure and improvements that would be needed to connect the Project to the grid would be built by PG&E; however, the associated noise and vibration impacts are included in this analysis. The PG&E interconnection infrastructure would be constructed in the southern part of the Project site. Similar to the solar facility, the PG&E interconnection would not be located within an airport land use plan, within 2 miles of an airport or within the vicinity of a private air strip and would have no impact under threshold c). Impacts with respect to other criteria are discussed below.

To connect the Project with the electrical grid, PG&E would extend an existing 230 kV gen-tie line by up to 0.2 mile to connect with the Project's proposed substation. The equipment used for this construction is anticipated to be similar to the equipment identified for the Project's ESS construction. The closest residence to this construction effort is located approximately 4,100 feet to the east-southeast. According to Table 4.14-4, noise levels associated with construction of the ESS would be 76 dBA Leq at 165 feet, which would attenuate to approximately 48 dBA Leq at 4,100 feet, the distance to the closest receptor to the PG&E interconnection facilities construction. PG&E would extend an existing 230 kV gen-tie line by up to 0.2 mile to connect with the Project's proposed substation. The equipment used for this construction is anticipated to be similar to the equipment identified for the Project. The closest residence to this construction effort is located approximately 3,000 feet to the southeast. According to Table 4.14-4, noise levels from gen-tie installation would be 67 dBA Leq at 165 feet, which would attenuate to approximately 41.8 dBA Leq at 3,000 feet. If construction activities associated with the PG&E interconnection facilities take place outside the Fresno County Noise Ordinance hours of 6:00 a.m. and 9:00 p.m.

on weekdays, or 7:00 a.m. and 9:00 p.m. on Saturdays and Sundays, noise at the nearest receptor would not exceed the nighttime L_{eq} limit of 45 dBA based on the Fresno County Exterior Noise Level Standard. This would constitute a less-than-significant impact.

Once operational, the bay added as part of the proposed expansion of the Tranquillity Switching Station would include transformer equipment, similar to the step-up transformer described for the Project. With a noise level of 59.7 dBA at 50 feet, the new equipment at the switching station would attenuate to approximately 21.4 dBA at the closest residence (4,100 feet to the east). The addition of this noise contribution would not increase the Project's operational noise levels at the nearest sensitive receptors.

Regarding audible noise associated with PG&E's 230 kV transmission lines, similar to as discussed relative to the proposed gen-tie line extension in the *Gen-Tie Corona Noise* discussion under Impact 4.14-1, the transmission lines at the nearest sensitive residential receptor located 3,000 feet away would be less than the County's nighttime threshold of 45 dBA. Therefore, operational corona noise associated with PG&E transmission lines would not represent a substantial increase in ambient noise levels. The impact would be less than significant with no mitigation required. In addition, the combined impacts of the Project and PG&E infrastructure would be less-than-significant with respect to noise and vibration.

4.14.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Compared to the Project, Alternative 1 would develop a solar facility on a 20-percent reduced acreage footprint. The Reduced Acreage Alternative would equate to a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 340 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce the scale of impacts to noise during construction. Depending on the final selected footprint relative to sensitive receptors identified in Figure 4.14-2, there is the potential for perceptible noise to be reduced under Alternative 1. Because the Reduced Acreage Alternative is conceptual in nature and the precise location for solar facilities and associated infrastructure is currently undetermined, construction impacts could still occur under Alternative 1. Therefore, this analysis conservatively assumes that Mitigation Measures 4.14-1, Noise Reduction Measures during Construction (as described under Impact 4.14-1) would also be required to be implemented under an Alternative 1 scenario to reduce such impacts. With implementation of this mitigation, impacts would be reduced to less than significant levels.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, ESS, or related facilities would be delivered to the Project site or constructed, operated, maintained, or decommissioned

there. No mobilization, site preparation, fencing installation or trenching would occur to prepare the site for construction; no excavation or earth-moving machinery operation, pile driving, or other construction work to install the proposed solar energy generating facility equipment or battery energy storage system would occur; and no operation, maintenance, repair, or demolition activities related to the Project would occur within or outside the time periods established in the County Noise Ordinance on the Project site. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to sound or vibration.

4.14.4 Cumulative Analysis

The geographic scope considered for potential cumulative impacts related to noise is the area within 1 mile of the Project site because sounds naturally attenuate with distance and topography. The temporal scope for cumulative noise impacts is during the construction and operation/ maintenance and decommissioning phases of the Project. There are two projects in the cumulative projects list that are already constructed and operating within this geographic scope and are part of the existing environmental setting with respect to noise and which are reflected in the monitoring data presented above. Therefore, ongoing impacts of noise of past projects are reflected in the environmental setting described in Section 4.14.1.2 and specifically include operations from the Adams East and Tranquillity solar projects.

Other cumulative projects within 1 mile of the Project site include the Scarlet (approved and in preliminary construction) and the Luna Valley (currently under Fresno County consideration) solar projects, which are located on parcels directly east of and west of the Project site, respectively, with construction timelines that could overlap with the Project. Therefore, there is a possibility that noise from construction, operation, or decommissioning of the Project could combine with noise from these other two projects to cause additional increases in maximum noise levels generated by the Project or Alternative 1.

Criterion a) Cumulative Noise

Cumulative Construction Noise

The analysis of the potential noise impacts of the Luna Valley Solar Project (Clearway 2020) did not include receptors R-1 and R-2 identified as the closest receptors to that project, since these receptors are located more than 1.5 miles and 2.3 miles, respectively, from the closest point of the Luna Valley Solar project. At these distances, construction noise levels from the Luna Valley Solar project are not expected to be audible near the Project site, and construction of the Project would not be expected to be audible near the Luna Valley Solar Project site. In addition, similar to the Project, the Luna Valley Solar Project would be expected to implement mitigation designed to reduce noise impacts as recommended in the EIR for that project (Fresno County 2021a). Therefore, the contribution of construction noise from the Sonrisa Solar Project would not be cumulatively

considerable, should both projects be constructed simultaneously, and the cumulative impact would be less than significant.

The other cumulative project within 1 mile is the Scarlet Solar Energy Project. This project is being constructed immediately east of the Project, across SR 33 and its southern extent would be across West Dinuba Street from receptor R-3. Construction of the substation, switchyard and battery energy storage system for the Scarlet project are proposed to occur approximately 1,500 feet north of receptor R-3. This is approximately the same distance that the Project gen-tie is from receptor R-3. Therefore, it can reasonably be expected that, if construction of the two projects were to occur simultaneously, a doubling of sound energy would occur and noise levels during construction would be 3 dBA greater under the cumulative condition compared to under the Project alone.

Project-generated noise is considered to be significant, and a mitigation measure identified based on the possibility for nighttime construction activities that, unlike daytime construction activities, are not exempt from the restrictions of the County Noise ordinance. However, the only nighttime construction activities that would be associated with the Scarlet Solar Project would consist of testing or inspection work that would not require the use of heavy-duty off-road equipment and would not be a substantial source of nighttime noise (Fresno County 2021). Consequently, there would not be a significant cumulative nighttime construction noise impact for the Project in consideration with either the Luna Valley Project or the Scarlet Solar Energy Project, and the Project alone would not cause one.

Cumulative Operational Noise

The cumulative scenario for the analysis of operational noise impacts considers ongoing impacts from the proposed Luna Valley and Scarlet solar projects. The Project could contribute noise to cumulative conditions from the onset of on-site activities through decommissioning and site restoration.

An analysis of the potential operational noise impacts conducted for the Project (Appendix J) includes a figure of operational noise contours that would be generated by Project equipment. The noise contour figure indicates a noise level of approximately 30 dBA L_{eq} at the approximate distance of receptor R-3 analyzed as part of the Project. One of the two other cumulative projects within 1 mile is the Scarlet Solar Energy Project. The EIR prepared for the Scarlet project (Fresno County 2021b) shows that its operational noise would be 43 dBA at the nearest sensitive receptor, which is identified as receptor R-3 in this EIR. Given the logarithmic nature of dBAs, combining 30 dBA with 43 dBA does not increase the combined noise level above 43 dBA. Therefore, the Project's operational noise impact would not cause or contribute to a significant cumulative impact with respect to the Scarlet project. The operational cumulative noise impact would be less than significant.

The other cumulative project within 1 mile is the Luna Valley Solar Project. The noise technical report prepared for the Luna Valley Solar Project shows that its operational noise would be 35 to 40 dBA at the nearest sensitive receptor (Clearway 2021), which is identified as receptor R-3 in this EIR. Given the logarithmic nature of dBAs, combining the Project's 30 dBA operational noise level with a noise level of 40 dBA does not increase the combined noise level above 40 dBA.

Therefore, the Project's operational noise impact would not cause or contribute to a significant cumulative impact with respect to the Luna Valley Solar Project, and its operational cumulative noise impact would be less than significant.

Criterion b) Cumulative Vibration

Vibration impacts from even the highest vibration-generating construction equipment are generally felt only within 100 feet of the equipment and attenuate rapidly with distance. Therefore, other projects in the vicinity would contribute to the cumulative vibration impact at a receptor if they are located within a 100-feet radius of a receptor. There are no cumulative projects proposed within this distance of Project receptors. Because of the distance of the other cumulative projects from receptors nearest to the Project, the receptors nearest the Project would be sufficiently distant to avoid any additive impacts from construction-related vibration. Therefore, cumulative vibration impacts would be less than significant.

Criterion c) Airstrips or Airports

As discussed above, there would be no impact with respect to exposure of people residing or working within the vicinity of a private airstrip or a public airport or public use airport in the project area. Therefore, neither the Project nor the alternatives could cause or contribute to any potential significant cumulative impact regarding this consideration.

4.14.5 References

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Fresno County, 2021b. Scarlet Solar Energy Project Draft Environmental Impact Report, May 2021, page 4.12-12.

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4.15 Population and Housing

This section identifies and evaluates issues related to Population and Housing in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Population and Housing (Appendix A, *Scoping Report*).

4.15.1 Setting

4.15.1.1 Study Area

The study area for the analysis of potential impacts to Population and Housing is conservatively defined to include the Project site and all communities within 75 miles of the Project site (within and beyond Fresno County). This study area represents the maximum reasonable distance that Project workers would reasonably be expected to travel (commute) to work at the Project site.

4.15.1.2 Environmental Setting

Population

The Project site is located in unincorporated Fresno County approximately 8 miles south of the City of Mendota. The mean commute time in Fresno County is 23.1 minutes (US Census 2021). This analysis conservatively assumes that construction workers may drive approximately 75 miles to the Project site during construction, operation, or decommissioning. Therefore, the following towns, cities, and unincorporated areas in Fresno County within 75 miles of the Project site were included in this evaluation of potential impacts to population and housing:

- Fresno (32 miles northeast of the Project), Clovis (40 miles northeast), Reedley (52 miles east), Sanger (46 miles northeast), Selma (43 miles east), Kerman (20 miles northeast), San Joaquin (10 miles east), Firebaugh (16 miles north), Mendota (9 miles north), Tranquillity (7 miles east), Helm (17 miles southeast), and Five Points (20 miles southeast).

Multiple cities in surrounding counties also are located within 75 miles of the Project site:

- Stanislaus County: Turlock (64 miles northwest), Newman (58 miles northwest), and Patterson (70 miles northwest)
- Merced County: Livingston (55 miles northwest), Atwater (52 miles northwest), Merced (47 miles north), and Los Banos (38 miles northwest)
- Madera County: Madera (29 miles northeast) and Chowchilla (35 miles northeast)
- Tulare County: Dinuba (54 miles east), Visalia (60 miles southeast), and Tulare (62 miles southeast); and
- Kings County: Hanford (43 miles southeast).

Population characteristics for cities in the study area are included in **Table 4.15-1**. Population estimates and projections are not available for unincorporated communities; therefore, unincorporated communities are not included in the table below.

TABLE 4.15-1
HISTORIC POPULATION GROWTH, 2000–2020

Area	2000[a]	2005[a]	2010[a]	2015[b]	2020[c]
Fresno County	799,407	866,058	930,450	975,169	1,020,292
City of Fresno	427,719	457,786	494,665	522,369	543,451
City of Mendota	7,890	9,179	11,014	11,248	12,424
City of Clovis	68,516	84,552	95,631	105,072	118,741
City of Reedley	20,756	21,447	24,194	25,477	25,974
City of Sanger	18,931	21,297	24,270	25,223	27,157
City of Selma	19,444	22,160	23,219	23,877	24,405
City of Kerman	8,548	10,985	13,544	14,582	15,922
City of San Joaquin	3,270	3,569	4,001	4,061	4,137
City of Firebaugh	5,743	6,953	7,549	7,841	8,035
City of Turlock	55,811	65,301	68,549	71,544	75,030
City of Newman	7,092	8,798	10,224	10,742	11,950
City of Patterson	11,606	15,677	20,413	21,152	23,150
City of Madera	43,205	51,735	61,416	63,150	65,526
City of Chowchilla	14,416	16,052	18,720	18,585	18,306
City of Atwater	23,113	26,829	28,168	29,420	31,648
City of Merced	63,893	72,402	78,958	82,320	88,261
City of Los Banos	25,869	32,061	35,972	37,711	41,855
City of Livingston	10,473	11,818	13,058	13,945	15,108
City of Dinuba	16,844	18,989	21,453	24,243	25,759
City of Visalia	91,891	106,054	124,442	130,660	138,456
City of Tulare	43,994	48,974	59,278	62,251	68,058
City of Hanford	41,687	48,016	53,967	55,921	59,178

SOURCES:
a California Department of Finance (CDF) 2012
b CDF 2020
c CDF 2021a

As demonstrated by Table 4.15-1, most of the cities within the study area have experienced moderate amounts of growth between the years 2000 and2020. In 2020, Fresno County had an estimated population of 1,020,292 representing an approximate 10 percent increase from the 2010 population of 930,450. The City of Mendota had a higher rate of growth during the 2010-2020 period, but its actual growth was only 1,410 persons. The City of Fresno had an estimated population of 543,451 in 2020, an approximate 10 percent increase from 2010.

From 2010-2050, the San Joaquin Valley as a whole is expected to have an annual growth rate of 1.33 percent. Fresno County is expected to grow at a slightly slower rate (1.2 percent annually) than the region while Kings County, Madera County, and Merced County are anticipated to grow at a slightly faster rate than the region as a whole (Fresno Council of Governments [FCOG] 2012).

Housing

Table 4.15-2 outlines housing data for Fresno County and the cities in the study area in January 2021. Vacancy rates for these jurisdictions ranged from 2.0 percent (City of Kerman) to 8.7 percent (City of Chowchilla). In 2020, Fresno County had an estimated 339,380 housing units with a vacancy rate of 6.9 percent; the City of Fresno had an estimated 183,334 housing units with a vacancy rate of 5.8 percent; and the City of Mendota had an estimated 2,801 housing units with a vacancy rate of 3.8 percent.

The number of households is expected to increase by 20 percent in Fresno County over the period from 2013-2023. In the cities of Fresno and Mendota, the number of households are expected to increase by 16.5 percent in each city over the 10-year time period (FCOG 2014).

TABLE 4.15-2
2021 HOUSING DATA ESTIMATES

Area	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate (percent)
Fresno County	339,380	315,997	23,383	6.9
City of Fresno	183,334	172,770	10,564	5.8
City of Mendota	2,801	2,695	106	3.8
City of Clovis	43,603	41,898	1,705	3.9
City of Reedley	7,277	6,990	287	3.9
City of Sanger	7,805	7,384	421	5.4
City of Selma	7,076	6,656	420	5.9
City of Kerman	4,407	4,321	86	2.0
City of San Joaquin	932	900	32	3.4
City of Firebaugh	2,160	2,033	127	5.9
City of Turlock	25,123	24,272	851	3.4
City of Newman	3,665	3,412	253	6.9
City of Patterson	6,674	6,231	443	6.6
City of Madera	18,237	17,237	1,000	5.5
City of Chowchilla	4,460	4,074	386	8.7
City of Atwater	10,358	9,785	573	5.8
City of Merced	30,041	28,221	1,820	6.1
City of Los Banos	12,826	11,958	868	6.8
City of Livingston	3,773	3,647	126	3.3
City of Dinuba	7,118	6,914	204	2.9

TABLE 4.15-2 (CONTINUED)
2021 HOUSING DATA ESTIMATES

Area	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate (percent)
City of Visalia	49,257	46,373	2,884	5.9
City of Tulare	22,053	20,837	1,216	5.5
City of Hanford	20,589	19,955	634	3.1

SOURCE: CDF 2021b

Temporary Housing

Fresno County currently has over 75 full-service hotels and motels, including six motels in western Fresno County. Numerous tent and RV campgrounds are available for temporary housing accommodations (Fresno County Office of Tourism 2021).

4.15.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern Population and Housing-related considerations on the Project site.

State

No state statutes, regulations, plans, or policies govern Population and Housing-related considerations on the Project site.

Regional

Fresno Council of Governments

FCOG is a regional planning organization comprised of representatives from Fresno County and its 15 incorporated cities. FCOG's primary responsibilities include transportation and housing planning. FCOG is the state-designated Regional Transportation Planning Agency and federally-designated Metropolitan Planning Organization for Fresno County (FCOG 2021). FCOG is responsible for preparing the Regional Housing Needs Allocation Plan (RHNA), a state-mandated document that determines the number of housing units each city and county are responsible for accommodating in the housing element sections of their general plans. The Fresno County RHNA Plan was last updated in 2013 and approved in July, 2014 (FCOG 2014). The planning period for the 2013 RHNA extends for 11 years from January 2013 to December 2023. The plan, which relies on Census data from 2010, State Department of Finance Data, California Department of Housing and Community Development data, and FCOG calculations, determined how best to allocate regional housing needs to Fresno County jurisdictions (FCOG 2014).

Local

Fresno County General Plan

The 2000 Fresno County General Plan is currently undergoing an update (Fresno County 2021); however, the 2021 General Plan update does not include an update to the Housing Element, which will be updated as part of a separate process in keeping with state requirements and deadlines. Because the 2021 Fresno County General Plan update does not contain any goals, policies, or implementation measures related to Population and Housing, this analysis relies on the goals, policies, or implementation measures related to population and housing that are set forth in the Multi-Jurisdictional Housing Element adopted in 2016, as discussed below (FCOG 2016).

In February 2013, the FCOG assembled a Regional Housing Needs Allocation Technical Committee with representatives from all Fresno County local governments. This committee prepared a Fresno Multi-Jurisdictional Housing Element for Fresno County governments with the goal of creating regional coordination to address countywide housing issues and needs (Fresno County 2016). This regional housing element update covers the planning period of December 2015 through December, 2023, representing the 2015-2023 Housing Element for 13 jurisdictions in Fresno County, including the County of Fresno and the City of Mendota. The Housing Element Update was adopted in April of 2016 (FCOG 2016).

Multi-jurisdictional Housing Element policies that are relevant to the Project include:

> ***Policy 1.9:*** Encourage development around employment centers that provides the opportunity for local residents to live and work in the same community by balancing job opportunities with housing types.
>
> ***Policy 3.1:*** Preserve the character, scale, and quality of established residential neighborhoods by protecting them from the encroachment of incompatible or potentially disruptive land uses and/or activities.

Fresno County Solar Facility Guidelines

In December 2017, the Fresno County Board of Supervisors revised the County of Fresno Solar Facility Guidelines. As a part of this revision process, the Board of Supervisors added Guideline Number 12, which states, “If the project is approved, the applicant shall make all reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce” And Guideline Number 14, which states, “ If the project is approved, the applicant shall make all reasonable efforts to purchase products and equipment from local (Fresno County) manufacturing facilities and/or vendors.”

4.15.2 Significance Criteria

The Project would result in significant impacts to population and housing if it would:

a) 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);

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.15.3 Direct and Indirect Effects

4.15.3.1 Methodology

The evaluation of potential Population and Housing impacts was based upon the likelihood of the Project to induce substantial unplanned population growth within approximately 75 miles of the Project site or to displace people or housing within that area such that replacement housing could be required. The nature of the Project, in consideration with population and housing characteristics of this region, was used to determine whether the Project would result in a significant Population and Housing impact.

4.15.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with respect to criterion a) and no impact with respect to criterion b). The impact conclusions for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).

Impact 4.15-1: The Project would not induce substantial unplanned population growth in an area, either directly or indirectly (*Less than Significant Impact*)

The Project would not include any new homes or businesses, and so would not directly induce population growth. The Project would not indirectly induce population growth as a result of the construction of the perimeter, access, and internal roads, or from other Project infrastructure interior to the Project site because these improvements would not be accessible to the public.

Construction of the Project is anticipated to employ a maximum of 350 on-site personnel. The duration of construction requiring the peak workforce is expected to be approximately 2 months out of the 14-month construction period. Decommissioning and site restoration activities are expected to require a similar or smaller workforce, compared to construction, and conservatively also take up to 14 months.

As described in Section 2.5.5.5, *Construction Schedule and Workforce*, based on the demographic profile of western Fresno County it is anticipated that a majority of the construction workforce would be hired from the existing workforce in the Fresno regional area. Once operational, the Project would require limited on-site personnel. On a typical day, the number of staff on site may range from none (it is not necessary for staff to be present during plant operations) to 30 during periodic, routine maintenance events. Non-routine (emergency) maintenance could require additional workers.

The California Employment Development Department (CEDD) estimated that the annual average unemployment rate in Fresno County in July 2021 was 9.3 percent (not seasonally adjusted) compared to the statewide unemployment rate of 7.9 percent (CEDD 2021a). In July 2016, the construction industry employed an average of 16,400 individuals in Fresno County. Five years later the number of individuals employed in the construction industry increased to 19,700 individuals in July 2021 (CEDD 2021b).

Consistent with the County of Fresno Solar Facility Guidelines, the Applicant has committed to recruiting and hiring from the local workforce to the extent reasonable (see Appendix I2). Solar industry data (including the successful construction of multiple solar energy generation projects in Fresno County) and unemployment data suggest that the number of jobs created by the Project's construction, operation, and decommissioning could be served by the experience and availability of the existing labor pool in Fresno County. Any increase in local economic activity due to the Applicant's commitment to purchase local products and equipment in compliance with Solar Energy Facility Guideline 14 is not anticipated to be significant and would not result in in-migration of workers to the study area.

As a result, workers would be expected to commute to the Project site from local and regional towns and cities, rather than relocate. Therefore, construction, operation, and decommissioning of the Project is not expected to require substantial numbers of new housing units, the construction of which could cause environmental impacts. Additionally, even if all of the Project's construction, operation and maintenance, and decommissioning workforce moved into the County, the County's housing market would have the capacity to absorb the increase in residents without requiring the construction of new housing units based on the California Department of Finance's housing estimates from January 2021, which indicated that the County had approximately 23,383 vacant housing units (CDF 2021b).

As a result, the Project is not expected to induce direct or indirect population growth. Additionally, even though the Project would increase the availability of electrical energy capacity, this factor alone is not expected to induce substantial population growth. Many factors such as economic conditions, land availability, the availability of water supply and sewer services, and local planning efforts are more likely to impact population growth. Therefore, the energy produced by the Project would not directly or indirectly encourage new development or induce population growth. Impacts would be less than significant.

Mitigation: None required.

Criterion b) Whether the Project would displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

For the reasons discussed in the analysis of criterion a), construction, operation, and decommissioning of the Project would not result in the displacement of residences or people. Therefore, the Project would have no impact with regard to the displacement of people and construction of replacement housing. **(*No Impact*)**

PG&E Infrastructure

To interconnect the Project with the electrical grid, PG&E would extend an existing 230 kV gen-tie line by up to 0.2-mile to connect with the Project's proposed substation. Construction of the gen-tie line extension would require a small subset of the workforce necessary for the overall Project. Therefore, this component of the Project would not result in substantial unplanned population growth or require the construction of new or replacement housing. No impact would occur. In addition, the combined impacts of the Project and PG&E infrastructure would be less than significant.

4.15.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Compared to the Project, Alternative 1 would construct, operate, maintain, and decommission a smaller solar generating facility upon a 20-percent reduced acreage footprint. Alternative 1 would involve a smaller scale of site disturbance; however, impacts would be comparable. Similar to the Project, there would be no increase in population associated with Alternative 1 and the alternative would not require the construction of additional housing nor would the alternative be directly associated with population increases. Indirect effects associated with temporary construction would occur on a reduced scale under Alternative 1. As the required duration for construction and the number of workers required would be decreased under Alternative 1, compared to the Project, these impacts would be reduced. Similar to the Project (on a reduced scale), impacts would be less than significant.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, gen-tie line, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. No construction workers would be required at the site. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Population and Housing.

4.15.4 Cumulative Analysis

As discussed in Section 4.15.3, there would be no impact with respect to the potential displacement of people or existing housing. Therefore, neither the Project nor the alternatives would cause or contribute to any potential cumulative impact to criterion b).

The geographic context for the cumulative impacts associated with the potential inducement of population growth includes cities and unincorporated communities within 75 miles of the Project site because this is the greatest reasonable extent of impacts of the Project to Population and Housing. As explained in Section 4.15.1.2, this area includes cities and communities within Fresno, Merced, Madera, Kings, Tulare, and Stanislaus counties. The temporal scope of potential

cumulative impacts would include the duration of the Project, from construction through decommissioning and site restoration. Cumulative effects could result from the combination of the incremental impacts of the Project or an alternative with ongoing impacts of past projects as well as the incremental impacts of other present and reasonably foreseeable future projects within the geographic scope.

The ongoing impacts of past projects are reflected in the description of the environmental setting (see Section 4.15.1.2), including the existing occupancy and housing availability levels. Incremental contributions from other present and reasonably foreseeable future projects, including the solar and other projects summarized in Table 4.1-1, could affect housing availability and the need to construct new or replacement housing by prompting in-migration to the study area. Because there are many factors that can affect the maximum workforce required for any particular project, it is difficult to estimate employment levels (or their potential to overlap) with any certainty. For example, it is estimated that the Project would require a maximum of 350 workers at the peak of construction for an approximately 2,000-acre site. By comparison, the existing Tranquillity Solar Project required no more than a maximum of 256 workers at any one time due to a phased construction schedule. Nonetheless, in general, solar PV projects do not induce substantial population growth as they do not create substantial numbers of permanent jobs. Therefore, the incremental impacts of the Project, in combination with other projects in the cumulative scenario (even if construction in the immediate area were to occur simultaneously), would not induce substantial in-migration or unplanned population growth. Therefore, the Project would not cause or contribute to a significant, adverse, cumulative impact relating to potential inducement of population growth.

4.15.5 References

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4.16 Public Services

This section identifies and evaluates issues related to public services in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive scoping comments pertaining to public services. See Appendix A, *Scoping Report*.

4.16.1 Setting

4.16.1.1 Study Area

The study area for the analysis of potential impacts to public services is defined to include the service areas of fire protection, law enforcement services, schools, parks, library, and medical providers that would serve the Project.

4.16.1.2 Environmental Setting

Fire Protection

Fire protection services in the vicinity of the Project site are provided by the Fresno County Fire Protection District (FCFPD). The FCFPD serves a population of more than 220,000 people across 2,655 square miles in the communities of Tarpey Village, Calwa, Easton, Malaga, Del Rey, Caruthers, San Joaquin, Tranquillity, Prather, Friant, Tollhouse, Wonder Valley, Cantua Creek, Three Rocks, Five Points, Centerville, Tivy Valley, Sand Creek and the cities of San Joaquin, Parlier, Mendota, and Huron. A total of 48 firefighters are on duty daily for emergency response. FCFPD responds to over 14,700 incidents annually. Approximately 68 percent of these incidents are medical incidents (FCFPD 2020a; 2020b). Minimum daily staffing includes one Duty Chief, three Battalion Chiefs, 13 apparatus with two personnel each, one engine with three fire personnel, and one ladder truck with three fire personnel (FCFPD 2019).

The nearest fire station to the Project site is Station 95, located approximately 7 miles east at 25101 Morton Street in the community of Tranquillity.

Law Enforcement

The Fresno County Sheriff's Department provides law enforcement services to unincorporated Fresno County and several incorporated cities within the County by contract. Patrol services are divided into four patrol areas, each commanded by a lieutenant who supervises field services from a substation located in each of the areas.

The Project site is in Patrol Area 1. The Area 1 substation is located at 21925 West Manning Avenue in the City of San Joaquin, approximately 10.5 miles east of the Project site. Area 1 encompasses approximately 2,400 square miles of western Fresno County and contains the unincorporated cities of San Joaquin, Coalinga, Huron, Kerman, Mendota, and Firebaugh. Area 1 also includes the unincorporated communities of Tranquility, Biola, Five Points, Helm, Three Rocks, Cantuna Creek, and Dos Palos.

Schools

The Project site is located within the Golden Plains Unified School District (GPUSD), which operates four elementary schools and two high schools (Fresno County Superintendent of Schools 2020; GPUSD 2017). Tranquillity Elementary School and Tranquillity High School are the closest schools, both are located approximately 7 miles northeast of the Project site. Cantua Elementary School is the next nearest school, located approximately 8 miles to the southeast.

Parks

The County offers a variety of recreational opportunities including regional parks, city parks, state and national parks, national forests, wilderness areas, scientific research areas, and other recreational opportunities. The Project site is not located within or adjacent to a residential area, or within the immediate vicinity of any parks or recreational facilities, and there no parks or existing recreational facilities located on the Project site. The nearest park is Mendota Wildlife Area, located approximately 8 miles to the northeast. Parks and other recreational resources are discussed further in Section 4.17*, Recreation.*

Other Public Facilities

The Tranquillity Branch of the Fresno County Public Library is located approximately 8 miles northeast of the Project site. The nearest public hospital is the United Community Health Center located at 121 Barboza Street, in Mendota, approximately 9 miles north of the Project site.

4.16.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies pertaining to the provision of public services are applicable to the Project.

State

No state statutes, regulations, plans, or policies pertaining to the provision of public services are applicable to the Project.

Local

The Public Facilities and Services Element of the Fresno County General Plan contains goals, policies, and implementation programs to ensure public facilities and services are adequately available and accessible to serve the community (Fresno County 2000).

The following goal and policies from the Public Facilities and Services Element are relevant to the Project:

> **Goal PF-G.** To protect life and property by deterring crime and ensuring the prompt an efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.

Policy PF-G.2: The County shall strive to maintain a staffing ratio of two (2) sworn officers serving unincorporated residents per 1,000 residents served. (This count of officers includes all ranks of deputy sheriff personnel and excludes all support positions and all sworn officers serving county wide population interests such as bailiffs, and sworn officers serving contract cities and grant specific populations).

Policy PF-G.6: The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing Sheriff Department review of development proposals.

The following goals, policies and implementation programs from the Public Facilities and Services Element also are relevant to the Project:

Goal PF-H. To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.

Policy PF-H.1: The County shall work cooperatively with local fire protection districts to ensure the provision of effective fire and emergency medical services to unincorporated areas within the county.

Implementation Program PF-H.B: The County shall work with the California Department of Forestry and Fire Protection, local fire protection agencies, and city fire departments to maximize the use of resources to develop functional and/or operational consolidations and standardization of services and to maximize the efficient use of fire protection resources. (See Policy PF-H.1).

Policy PF-H.2: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities are provided.

Policy PF-H.5: The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.8: The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards for average first alarm response times to emergency calls:

a. 5 minutes in urban areas;

b. 15 minutes in suburban areas; and

c. 20 minutes in rural areas.

Policy PF-H.10: The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other State and local ordinances.

Policy PF-H.11: The County shall encourage local fire protection agencies to provide and maintain advanced levels of emergency medical services (EMS) to the public, consistent with current practice.

The following goals and policies programs from the Public Facilities and Services Element are relevant to the Project:

> **Goal PF-I.** To provide for the educational needs of Fresno County and provide libraries for the educational, recreational, and literary needs of Fresno County residents.
>
> > ***Policy PF-I.1:*** The County shall encourage school districts to provide quality educational facilities to accommodate projected student growth in locations consistent with land use policies of the General Plan.
> >
> > ***Policy PF-I.4:*** The County shall work cooperatively with school districts in monitoring housing, population, and school enrollment trends and in planning for future school facility needs and shall assist school districts in locating appropriate sites for new schools.

The following policy within the Open Space and Conservation Element also is relevant to the Project:

> ***Policy OS-H.2*****:** The County shall strive to maintain a standard of five (5) to eight (8) acres of County-owned improved parkland per one thousand (1,000) residents in the unincorporated areas.

4.16.2 Significance Criteria

The Project would result in significant impacts to public services if it would:

a) 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 following public services:

   i. Fire protection
   ii. Police protection
   iii. Schools
   iv. Parks
   v. Other public facilities

4.16.3 Direct and Indirect Effects

4.16.3.1 Methodology

The evaluation of potential public services impacts was based upon the likelihood of the Project to increase demand, alter, or interfere with existing public services in a manner that would generate a need for the construction of new, or the alteration of existing, public services facilities, the construction of which could cause an adverse change in the physical environment.

4.16.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would have no impact on Public Services.

Criterion a) Whether the Project would 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 fire protection, police protection, schools, parks, or other public facilities.

Fire

The Project would not increase population to the extent that additional fire protection services or new FCFPD facilities would be needed. The Project site temporarily would employ construction personnel during the up-to14 months of construction duration and, as described in Chapter 2, *Project Description*, reasonable efforts to hire workers within the local workforce would be made, consistent with the County's Solar Facility Guidelines. Because of this, the Project's construction would not increase population and/or contribute to a substantial increase in demand for fire protection services. As construction involves the use of heavy equipment and carries risk for accidents and accidental ignitions, it is possible for temporary demands for emergency or fire response to increase during construction. However, such a demand would not substantially impact FCFPD's ability to maintain acceptable service ratios, response times or other performance objectives for fire protection services, such that new facilities would be needed.

Project construction and decommissioning may temporarily affect demand for fire services because traffic and vehicle trips would be temporarily increased and accidents associated with construction could occur. However, the Project's construction would be limited to 10-14 months, so this effect would be temporary and not substantial and would not affect FCFPD's ability to respond to incidents or ensure the prompt and efficient provision of fire and emergency medical facility and service needs as described in Goal PF-H.

The Project's energy storage system would consist of a number of lithium-ion batteries or flow batteries to store direct-current electricity. As applicable, the batteries would be arranged in temperature-controlled racks and equipped with fire suppression systems in accordance with the 2019 California Fire Code requirements. Flow batteries do not present the same fire risk as lithium-ion batteries because the aqueous electrolyte is not flammable and deviations from safe operating parameters are designed to trigger a shut-down in flow battery systems (Energy Response Solutions 2017). As described in the Project Description, two options for ESS are being contemplated, AC-coupled centralized ESS and DC-coupled distributed ESS. Both options would be required to comply with current building code and fire code requirements. This is described in more detail in Section 4.10, *Hazards and Hazardous Materials*, under Impact 4.10-2. Assuming the Project's compliance with existing regulatory requirements, the energy storage system would not increase fire risk in a manner that would affect FCFPD's ability to respond to calls or otherwise increase the need for fire protection services.

Construction, operation, and decommissioning of the Project would not result in physical or operational changes that would interfere with FCFPD response times or performance objectives such that provision of new or physically altered FCFPD facilities would be required. **(*No Impact*)**

Police

Construction, operation and maintenance, and decommissioning activities could temporarily affect the demand for police protection services but would not be substantial enough to require the construction of new or physically altered police protection facilities. Response from the sheriff's office may be required in the event of theft or vandalism at the Project site. To limit theft or vandalism during construction, the site would be fenced with materials and/or equipment staged within the Project site boundaries. Security guards would be available to monitor the site, and infrared security cameras, motion detector lighting, and/or similar technology may be installed for security purposes. Should the security system detect unauthorized personnel on the Project site, a security representative would be dispatched, and local authorities would be notified.

Although construction, operation, and decommissioning of the Project could result in temporary increases in the demand for police protection services, this increase would not require the construction or expansion of law enforcement facilities. Therefore, there would be no impact. **(*No Impact*)**

Schools

As discussed in Section 4.15, *Population and Housing*, no housing is proposed as part of the Project or would be required by its development. The workforce required for construction, operation and maintenance, and decommissioning would not contribute to a substantial increase in population because construction activities would be temporary and workers would not be likely to relocate to the area. Furthermore, consistent with Fresno County Solar Facility Guidelines, reasonable efforts would be made to hire from the local workforce. Permanent on-site staff is anticipated to involve up to 7 workers. Intermittent additional support may be needed to perform maintenance such as panel cleaning or occasional repairs once the Project is operational. Therefore, the Project would not generate a demand for new school facilities or require the alteration of existing school facilities. **(*No Impact*)**

Parks

As discussed in Section 4.17, *Recreation*, the Project would not result in the construction or alteration of park facilities and would not result in population increases that would affect Fresno County's ability to meet or maintain its parkland provision goals. The Project would not increase population, nor include or require housing. Therefore, the Project would not require or result in the provision of new park facilities or alterations to existing park facilities. **(*No Impact*)**

Other Public Facilities

No other public facilities are present on-site or within 8 miles of the Project site. No residences or public facilities are proposed nor would be required as part of the Project. Because the Project would not result in an increase in population, construction, operation, maintenance, and

decommissioning of the Project would neither increase the demand for existing public services, nor require the construction or expansion of any other public facilities. **(*No Impact*)**

PG&E Infrastructure

The PG&E infrastructure and improvements that would be needed to connect the Project to the grid would not result in any impacts to public services. The site work that would occur to extend the existing 230 kV gen-tie line and its operation and maintenance would have a similar negligible impact on fire protection, police, and other public services. Although, accidents and incidents could occur generating a temporary increased demand for police, fire, or other emergency services during construction, it is unlikely that any such incremental increase in demand would persist beyond the 14-month duration of construction. Following construction, the site would be monitored by security systems and personnel. Temporary increased demands (during construction) would not necessitate the construction or expansion of existing public services facilities. Construction and operation of PG&E infrastructure, as with the Project, would not contribute to a significant population increase in the local region that could result in an increase in demand for schools or park facilities or require new or altered facilities. Therefore, the PG&E transmission line associated with the Project would have no impact on public services. In addition, the combined impacts of the Project and PG&E infrastructure would be less than significant.

4.16.3.3 Direct and Indirect Effects of Alternatives

Alternative 1: Reduced Acreage Alternative

Compared to the Project, Alternative 1 would construct, operate, maintain and decommission a smaller solar generating facility upon a 20-percent reduced acreage footprint. Alternative 1 would involve a smaller scale of site disturbance; however, impacts would be comparable. Similar to the Project, there would be no increase in population associated with Alternative 1 and the alternative would not require the construction of additional public service facilities. Therefore, under Alternative 1, there would be no impact associated with public services.

No Project Alternative

If the No Project Alternative was to be implemented the site would continue to be utilized for dry farmed agricultural purposes, which would not have any appreciable impacts that would necessitate an increase in population requiring that public facilities be constructed or expanded. Therefore, under a No Project Alternative scenario, no impact to public services would occur.

4.16.4 Cumulative Analysis

Because the Project and alternatives would cause no impact with respect to the provision of new or physically altered fire or police protection, school, medical, or other public service facilities, neither the Project nor the alternatives would cause or contribute to any cumulative impact related to these services.

4.16.5 References

Energy Response Solutions, 2017. Energy Storage System Safety: Comparing Vanadium Redox Flow and Lithium-Ion Based Systems. Available: http://energyresponsesolutions.com/wp-content/uploads/VRB_SafetyReport.pdf. Accessed October 5, 2022.

Fresno County, 2000. Fresno County General Plan, Policy Document. Available: https://www.co.fresno.ca.us/home/showpublisheddocument?id=18117. Accessed March 9, 2021.

Fresno County Fire Protection District (FCFPD), 2019. Fresno County Fire Protection District FY 2019/2020.. Available: https://www.fresnocountyfire.org/wp-content/uploads/2019/07/FY-19-20-Preliminary-Budget.pdf. Accessed March 9, 2021

FCFPD, 2020 (a). About Us. Available: https://www.fresnocountyfire.org/our-department/. Accessed March 9, 2021.

FCFPD, 2020 (b). District Operations. Accessed December 2, 2020. Available: https://www.fresnocountyfire.org/stations-and-functions/#district-operations.

Golden Plains Unified School District, 2017. Schools. Accessed December 2, 2020. Available: http://www.gpusd.org/schools.

4.17 Recreation

This section identifies and evaluates issues related to Recreation in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Recreation (Appendix A, *Scoping Report*).

4.17.1 Setting

4.17.1.1 Study Area

The study area for the analysis of potential impacts to Recreation includes the Project site and the parks, open spaces, and other lands used for recreational purposes that are located within 15 miles of the Project site.

4.17.1.2 Environmental Setting

Recreational opportunities within Fresno County include city parks, regional parks, state and national parks, national forests, and wilderness areas. There are no recreational resources within the Project site or within approximately 4 miles; most recreational resources are located within the eastern portion of the County (Fresno County 2000). **Table 4.17-1** lists the parks and recreational facilities within an approximately 15-mile radius of the Project site.

TABLE 4.17-1
RECREATION FACILITIES NEAREST TO THE PROJECT SITE

Recreational Facility	Managing Agency	Approximate Distance From Project Site
Mendota Wildlife Area	CA Department of Fish and Wildlife	4 miles northeast
Alkali Sink Ecological Reserve	CA Department of Fish and Wildlife	8 miles northeast
Kerman Ecological Reserve	CA Department of Fish and Wildlife	12 miles northeast
Rojas Pierce Park	Mendota	10 miles north
Dunkle Park	Firebaugh	15 miles northwest
Three Rocks Fishing Access	Fresno County	6 miles southeast
Panoche Hills	Bureau of Land Management/CDFW	15 miles west
SOURCES: CDFW 2019 and 2021; Fresno County 2000 and 2021; BLM 2021; Google Earth 2021		

4.17.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern Recreation-related considerations on the Project site.

State

No state statutes, regulations, plans, or policies govern Recreation-related considerations on the Project site.

Local

Fresno County General Plan

The Fresno County General Plan *Open Space and Conservation Element* discusses policies to enhance recreational opportunities in the County by encouraging further development of public and private recreational opportunities. One policy within *Section H*, *Parks and Recreation*, provides a quantitative goal for the provision of parkland:

> ***Policy OS-H.2*:** The County shall strive to maintain a standard of five (5) to eight (8) acres of County-owned improved parkland per one thousand (1,000) residents in the unincorporated areas (Fresno County 2000).

4.17.2 Significance Criteria

The Project would result in significant impacts to recreation if it would:

a) 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;

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.17.3 Direct and Indirect Effects

4.17.3.1 Methodology

The Project's proposed location and components were reviewed relative to the location and capacity of parks and recreational facilities within an approximately 15-mile radius of the Project site to determine whether Project-caused changes would be significant.

4.17.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would have no impact on Recreation.

Criterion a) Whether the Project would 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.

Increases in use of recreational facilities typically are associated with substantial increases in population or a substantial reduction in the availability of existing parks or other recreational facilities. The Project site is not located within or adjacent to a residential area, or within the immediate vicinity of any parks or recreational facilities, and there are no parks or existing

recreational facilities located on the site. Therefore, the Project would not result in a substantial increase in the existing demand for parks and recreation-related facilities.

Because it is anticipated that construction workers would be hired from within Fresno County, consistent with the County's Guidelines for Solar Facility development, construction would not result in a temporary increase in the local population as a result of temporary worker in-migration. Therefore, implementation of the Project would not result in or accelerate the substantial physical deterioration of existing recreational facilities. **(*No Impact*)**

Criterion b) Whether the Project would include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The Project would not include the construction of any new recreational facilities, nor would it require the alteration of any existing recreational facilities. See Chapter 2, *Project Description*. Further, as described in Section 4.15, *Population and Housing*, the Project would not result in population growth within the County, and therefore would not affect the County's ability to provide park facilities at the ratio described in General Plan Policy OS-H.2. Therefore, the Project would not require the construction or expansion of recreational facilities. **(*No Impact*)**

PG&E Infrastructure

To interconnect the Project with the electrical grid, PG&E would extend an existing 230 kV gen-tie line by up to 0.2 mile to connect with the Project's proposed substation. The PG&E gen-tie line extension would not increase the use of existing parks or other recreational facilities as construction workers would be temporary and would be expected to come from the local labor pool. Therefore, the PG&E-related aspects of the Project would not (in and of themselves or as part of the Project as a whole) result in population growth within Fresno County, and would not affect the existing rates of park and recreation facility deterioration or the County's ability to meet existing demand for parks and recreation-related facilities. No impact would occur. In addition, the combined impacts of the Project and PG&E infrastructure would result in no impact on recreational facilities.

4.17.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Compared to the Project, Alternative 1 would also not impact recreational resources. The scale of site disturbance would be reduced under Alternative 1. However, there would be no change to the significance determinations as described in Section 4.17.3. ***(No Impact)***

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, gen-tie line, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. Existing use of area parks and other recreational facilities would not be affected in

any way by any Project personnel or activity. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Recreation.

4.17.4 Cumulative Analysis

Because the Project and alternatives would result in no impact to Recreation, neither the Project nor the alternatives could cause or contribute to a significant cumulative impact to Recreation.

4.17.5 References

Bureau of Land Management (BLM), 2021. Panoche Hills. https://www.blm.gov/visit/panoche-hills. Accessed September 22, 2021.

California Department of Fish and Wildlife (CDFW), 2019. Alkali Sink Ecological Reserve, Kerman Ecological Reserve, Mendota Wildlife Area. August 2019.

CDF), 2021. CDFW Public Access Lands, Active Map. https://apps.wildlife.ca.gov/lands/. Accessed March 11, 2021.

Fresno County, 2000. Fresno County General Plan Open Space and Conservation Element. Adopted October 3, 2000. https://www.co.fresno.ca.us/home/showdocument?id=18117. Accessed October 20, 2020. Accessed March 11, 2021.

Fresno County Department of Public Works and Planning, 2021. Parks and Access Facilities Map. https://www.co.fresno.ca.us/home/showdocument?id=12713.

4.18 Transportation

This section identifies and evaluates issues related to Transportation in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The County received scoping input from the California Department of Transportation (Caltrans) regarding its jurisdiction over State Route 33 (SR 33), the Project's responsibility to pay the Fresno County Regional Traffic Mitigation Fee, and site access recommendations (Appendix A). The County reviewed and considered this input in preparing the Draft EIR.

This analysis is based in part on the *Sonrisa Solar Park Traffic Study*, prepared by Dudek in April 2021 (Appendix K). The preparers of this Draft EIR independently reviewed the study and determined it to be suitable for reliance, in combination with other materials included in the formal record, in the preparation of this Draft EIR.

4.18.1 Setting

4.18.1.1 Study Area

The Project site is located in unincorporated Fresno County, on the east side of SR 33 (South Derrick Avenue) between West Manning Avenue and West Adams Avenue, and approximately 7.5 miles east of Interstate 5 (I-5). Access to the Project site would be provided by the existing roadway network described below; primary site access (ingress and egress) would be on West Manning via SR 33, with secondary access via West Adams Avenue. The transportation study area includes the roadways where Project construction, operation, and decommissioning would add vehicle trips, which include SR 33 between I-5 to the south and West Panoche Road to the north; West Manning Avenue between I-5 to the west and James Road/South Calaveras Avenue to the east; and West Adams Avenue between SR 33 to the west and the Project driveway to the east. In addition, the transportation study area includes pedestrian, bicycle, and transit facilities located on public roadways adjacent to the Project site (i.e., SR 33 and West Manning Avenue).

4.18.1.2 Environmental Setting

Major Highways

SR 33 is a two-lane undivided highway that provides a connection between I-5 and the community of Mendota. Dedicated turn lanes are generally provided from SR 33 to nearby intersections. There is approximately 2 feet of paved and 5 feet of unpaved shoulder on either side of SR 33 in the vicinity of the Project site. Traffic counts collected in March 2021 as part of the Project indicated that the average daily traffic (ADT) and peak hour volumes on SR 33 in the vicinity of the Project site are approximately 1,790 and 160 vehicles, respectively.[1]

[1] Due to rural nature of the study area, the traffic volumes in the study area were not expected to be impacted significantly due to shelter in-place restrictions of COVID-19.

I-5 is a north-south interstate highway that extends from the Mexican border to the Canadian border and provides access for goods movement, shipping, and travel. Access to the Project site from I-5 is provided via an interchange with West Manning Avenue. The ADT volume on I-5 at West Manning Avenue is approximately 41,500 vehicles, with up to approximately 5,500 vehicles during the peak traffic hour (Caltrans 2019).

Local Roads

West Manning Avenue is a two-lane undivided major roadway that provides a connection from about 2.5 miles west of I-5 all the way to the City of Reedley approximately 50 miles east of the Project site. Similar to SR 33, there is approximately 2 feet of paved and 5 feet of unpaved shoulder on either side of West Manning Avenue in the vicinity of the Project site. There are no dedicated turn lanes onto or off West Manning Avenue in the vicinity of the Project site. Traffic counts collected in March 2021 as part of the Project indicated that the ADT and peak hour volumes on West Manning Avenue in the vicinity of the Project site are approximately 1,055 and 106 vehicles, respectively. West Manning Avenue intersects with SR 33 on the western boundary of the Project site. About 60 percent of vehicle trips generated by the Project would travel through this intersection to get to the Project driveway east of the intersection on West Manning Avenue. There are dedicated left-turn lanes off of SR 33 onto West Manning Avenue.

West Adams Avenue is a two-lane undivided local roadway that provides a connection from the California Aqueduct (approximately 6.5 miles west of the Project site) to the intersection of West Manning Avenue/James Road/South Calaveras Avenue. Traffic counts collected in March 2021 as part of the Project indicated that the ADT and peak hour volumes on West Adams Avenue in the vicinity of the Project site are approximately 187 and 14 vehicles, respectively. It is located along the northern boundary of the Project site and would be used by about 40 percent of vehicles generated by the Project via an intersection on SR 33. There are no dedicated left-turn lanes off of SR 33 onto West Adams Avenue.

Public Transportation

The Fresno County Rural Transit Agency (FCRTA) provides passenger bus service between, and within, the rural communities of Fresno County. There are 13 fixed transit routes offered by the FCRTA, and reservation-based, demand responsive service offering curb-to-curb transportation is available in most communities. Westside Transit, a subsystem of FCRTA, provides scheduled round trip intercity service between Firebaugh, Mendota, and Kerman to the Fresno-Clovis Metropolitan Area, Monday through Friday from 7:00 a.m. to 5:30 p.m. (FCRTA 2021). The nearest bus stop to the site is located approximately 9 miles north of the Project site on Oller Street in Mendota.

Non-Motorized Transportation

There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the Project site or along the surrounding roadways or highways, including SR 33 and West Manning Avenue. The Fresno County Regional Bicycle and Recreational Trails Master Plan does not identify any

planned pedestrian or bicycle facilities in the immediate vicinity of the Project site or along the surrounding roadways or highways (Fresno County 2013).

4.18.1.3 Regulatory Setting

State

California Department of Transportation (Caltrans)

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. Fresno County is under the jurisdiction of Caltrans District 6. The following Caltrans regulations apply to potential transportation and traffic impacts of the Project:

California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

Local

Fresno County General Plan

The Transportation and Circulation Element of the County General Plan provides the framework for Fresno County decisions concerning the Countywide transportation system, which includes various transportation modes and related facilities. It also provides for coordination with the cities and unincorporated communities within the County, with the Regional Transportation Plan adopted by the Fresno Council of Governments (COG), and with state and federal agencies that fund and manage transportation facilities within the County. This element of the General Plan sets out goals, policies, and programs related to transportation and circulation. The following transportation-related policies are applicable to the Project:

Policy TR-A.3: The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section. Exceptions to the access standards may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the designed safety and operational characteristics of the existing and planned roadway facility will not be substantially diminished.

Policy TR-A.5: The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.

Policy TR-A.7: The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.

Policy TR-A.8: The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.

Fresno County Bicycle and Regional Trails Master Plan

The Fresno County Department of Public Works and Planning adopted the Regional Bicycle Recreational Trails Master Plan to establish a framework for future development of the County's bicycle and recreational trail network and makes the County eligible for local, State, and federal funding (Fresno County 2013). The Bicycle and Regional Trails Master Plan provides a comprehensive, long-term planning horizon for development of an extensive regional bikeway and recreational trails network that connects cities and unincorporated areas countywide. The plan implements various policies contained in the Transportation and Circulation and Open Space and Conservation Elements of the County's General Plan (Fresno County 2000).

The plan was amended in 2013 to meet the requirements of the 2006 Measure "C" Transportation Sales Tax Extension, Local Transportation Program by adding recreational trails to the plan. The plan coordinates the Regional Bikeway System with existing local bikeway plans that tie into a comprehensive bikeway system; coordinates the Fresno County Regional non-motorized transportation system with adjoining counties; and identifies barriers that inhibit safe and convenient non-motorized travel and includes a list of corrective measures to remove the barriers. The plan contains Policy BP-A.5, which requires development projects adjacent to designated bikeways to provide adequate rights-of-way or easements.

Fresno County Regional Active Transportation Plan

The Fresno COG adopted the Fresno County Regional Active Transportation Plan on February 22, 2018. The Active Transportation Plan is a comprehensive guide outlining the vision for biking, walking, and other human-powered transportation in Fresno County and a roadmap for achieving that vision. The Active Transportation Plan proposes a comprehensive network of countywide bikeways trails, and sidewalks; crossing improvements at key intersections; and locations for recommended bicycle parking. At build out, the recommended network would add 248 miles of Class I Bikeways (bike paths), 1,591 miles of Class II Bikeways (bike lanes), 59 miles of Class III Bikeways (bike routes), 11 miles of Class IV Separated Bikeways, and 89 miles of sidewalks. Build-out of the plan would also improve 80 intersections and street crossings for pedestrians and add 175 bicycle parking locations (Fresno COG 2018).

This plan meets all requirements for active transportation plans as specified by the California Transportation Commission's 2017 Active Transportation Plan Guidelines.

Fresno Council of Governments Regional Transportation Plan

The 2018 Regional Transportation Plan (RTP) was prepared by the Fresno COG and was adopted in June 2017. An update to the RTP is currently underway; it is expected to be completed in 2022. The RTP is a blueprint that establishes a set of regional transportation goals, policies, and actions

intended to guide development of the planned multimodal transportation systems in Fresno County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. Additionally, the RTP establishes a basis on which funding applications are evaluated. Use of any state or federal transportation funds by local governments must conform to the RTP, the State Implementation Plan for air quality improvements, and the Federal Transportation Improvement Programs. Fresno COG prepared the 2018 RTP to include a Sustainable Communities Strategy, which is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from automobiles and light trucks. The Sustainable Communities Strategy is required by Senate Bill 375 (SB 375), which went into effect in 2009 (Fresno COG 2017a).

Council of Fresno County Governments Congestion Management Process

All urbanized areas with a population larger than 200,000 people are required to have a Congestion Management System, Program, or Process. Fresno COG refers to its congestion management activities as the Congestion Management Process (CMP). The 2009 Fresno County CMP was designed to meet the federal requirement under Title 23 of the Code of Federal Regulations Sections 500.109 and 450.320. The 2017 CMP is an update to the 2009 CMP based on emerging transportation planning practices such as the transportation performance measurement required under the Moving Ahead for Progress in the 21st Century Act and the Fixing America's Surface Transportation Act (Fresno COG 2017b).

The CMP is a systematic process for managing congestion that provides information on: (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The purpose of the CMP is to help ensure that a balanced transportation system is developed that relates population growth, traffic growth, and land use decisions to transportation system level of service (LOS) performance standards and air quality improvement. The CMP is an effort to more directly link land use, air quality, transportation and the use of new advanced transportation technologies as an integral and complementary part of the region's plans and programs. The purpose of defining the CMP network is to establish a system of roadways that will be monitored in relation to established LOS standards. At a minimum, all state highways (e.g., SR 33, SR 180) and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways.

As discussed below in Section 4.18.3.1, *Methodology*, CEQA Guidelines Section 15064.3(b) was adopted in December 2018. It requires lead agencies to evaluate transportation impacts based on a vehicle miles traveled (VMT) approach, and no longer allows vehicle delay and LOS to be used to determine the significance of a transportation impact for purposes of CEQA. Because the CMP is solely focused on vehicle delay and LOS transportation metrics, it is not the focus of the analysis of transportation impacts in this EIR.

4.18.2 Significance Criteria

The Project would result in significant impacts to transportation if it would:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

d) Result in inadequate emergency access.

4.18.3 Direct and Indirect Effects

4.18.3.1 Methodology

Trip Generation

Trip generation for Project construction is shown below in **Table 4.18-1**. Project construction would include several simultaneous phases: site preparation and grading, trenching, gen-tie installation, energy storage and system installation, testing and commissioning, paving and site clean-up. The length of each phase over the 14-month construction period was evaluated to identify which phases could occur concurrently to determine peak worker and truck traffic, since traffic during these overlapping phases would be additive. Trip generation for decommissioning would be similar to that estimated for Project construction.

TABLE 4.18-1
TRIP GENERATION FOR PROJECT CONSTRUCTION

	Daily			Trip Generation				PCE Trip Generation			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Workers	Trucks	ADT (PCE)	in	out	in	out	in	out	in	out
Peak Construction Traffic	350	72	1,027	307	9	9	307	324	27	27	324

ABBREVIATIONS:
ADT – average daily traffic
PCE – passenger car equivalents.

SOURCE: Dudek 2021 (Appendix K).

Detailed trip generation for the Project was developed based on planning and scheduling of the construction activities as well as the Applicant's experience with construction and operation of solar facilities similar to the Project. For the purposes of CEQA, the values shown in the table provide a conservative scenario in that they represent the peak month of Project construction activities and not average traffic conditions that would be experienced during the 10 to 14-month construction period. The peak month is estimated to occur during the fifth or sixth month of Project construction.

It is anticipated, given the distance between the City of Fresno and the Project site, that some workers would carpool; an estimated 15 percent of workers carpooling was used for the analysis, based on the Applicant's experience with similar construction projects, and is reflected in the values shown in the table. The trip generation assumes a passenger car equivalent (PCE) of 3.0 for the large trucks associated with construction activities. PCEs account for differences between trucks and passenger vehicles (i.e., trucks utilize more roadway capacity than passenger vehicles due to their larger size, slower start-up times, and reduced maneuverability).

The work shift would begin during the AM peak period, which generally occurs between 6:00 a.m. and 8:00 a.m. for areas within rural Fresno County, and would end during the PM peak period, which generally occurs between 3:30 p.m. and 5:30 p.m. for areas within rural Fresno County. Therefore, it was assumed that 100 percent of the workers would arrive at the Project site during the AM peak hour, and 100 percent of the workers would depart the site during the PM peak hour.

Once constructed, the Project would operate 7 days per week and 365 days per year. Approximately 7 permanent on-site staff would be present during normal business hours (unless otherwise required) to operate, maintain, and/or monitor the site. On-site staff would generate approximately 14 daily one-way trips (7 inbound during the AM peak period and 7 outbound during the PM peak period). Remote monitoring of the site also may occur, which would be performed (after hours) through a security company, contracted with the Applicant.

Trip Distribution

The Project traffic distribution was estimated using the regional location of the Project, logical commute routes for workers, and available truck routes for Project-related trucks. It is expected that most of the construction workforce would commute daily to the jobsite from larger population centers, via I-5, SR 33, West Manning Avenue and Adams Avenue. It is anticipated that approximately 35 percent of construction workers would access the Project site from the northeast (i.e., Mendota and Firebaugh) via SR 33, 30 percent would access the Project site from the southwest (i.e., Coalinga) and other areas along I-5, and the remaining 35 percent would access the Project site from the east (i.e., Fresno and Clovis) via West Manning Avenue. Most of the truck traffic (approximately 80 percent) would originate from I-5, approximately 10 percent is expected to travel from the north along SR 33, and the remaining 10 percent of truck traffic is likely to travel from the east along West Manning Avenue.

Vehicle Miles Traveled

CEQA Guidelines Section 15064.3(b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts focus primarily on projects within transit priority areas, and shift the focus from driver delay (based on a LOS approach) to reduction of GHG emissions, creation of multimodal networks, and promotion of a mix of land uses (based on a VMT approach). The revisions require lead agencies to evaluate transportation impacts based on VMT beginning July 1, 2020. VMT is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

As explained in CEQA Guidelines Section 15064.7, "Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence. Lead agencies may also use thresholds on a case-by-case basis…. When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." The County of Fresno has not adopted a VMT-related threshold of significance for use in its CEQA documents. However, the Fresno County Council of Governments (Fresno COG) has. The Fresno COG was created as a joint powers authority by the elected officials of Fresno County and its incorporated cities in 1969. It undertakes comprehensive regional planning with an emphasis on transportation. In July 2020, Fresno COG adopted transportation significance thresholds and screening criteria based on VMT in guidance entitled, *Fresno County SB 743 Implementation Regional Guidelines* (Fresno COG 2020). Absent a formally-adopted County-specific VMT threshold of significance, the County relies in this EIR on Fresno COG's published VMT-based transportation significance thresholds and screening criteria to determine whether a Project-caused change in the environment would be significant regarding VMT.

Traffic Index

Roadway pavement is designed to carry the truck traffic loads expected during the pavement design life. Truck traffic is the primary factor affecting pavement design life and its serviceability. The calculation of Traffic Index (TI) is a measure of the deteriorating effects that truck traffic has on asphalt concrete pavement and provides the information necessary to design a structural section for a roadway. The TI calculation was conducted using the Caltrans Highway Design Manual procedures as described in Chapter 610, Pavement Engineering Considerations, Topic 613- Traffic Considerations (Caltrans 2020). The TI Calculation is used by the County to determine the Pavement Condition Index (PCI) for roadway segments of SR 33, Adams Avenue and West Manning Avenue adjacent to the Project site to assess the potential change in pavement conditions with the Project-added truck trips.

According to Fresno County, a project would result in a significant TI impact if the project-added traffic causes an increase in the baseline traffic index of 0.5 or more, except on roadways that have been resurfaced within the last five years and for which the design traffic index at the time of the resurfacing exceeded the calculated traffic index with the project. If the design traffic index is not available, then the exception shall not apply. A pavement impact, as determined based on the TI analysis, may be mitigated either by construction of an overlay, reconstruction of the pavement section, or by participating financially for the costs of the mitigation to the extent of the project's fair share.

4.18.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with mitigation incorporated for criterion a), and less-than-significant impacts with respect to criteria b), c), and

d). The mitigation recommended in response to the criterion a) impact would not apply to the subset of the Project that is the PG&E infrastructure, for which the other impact conclusions would be the same as for the Project as a whole.

Criterion a) Whether the Project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Impact 4.18-1: Construction of the Project would generate a temporary increase in traffic volumes on area roadways, which could conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. (*Less than Significant with Mitigation Incorporated*)

Site Clearing and Construction

Roadways

As described in Chapter 2, *Project Description*, site clearing and construction would be short-term and would occur over 10 to 14 months. Construction traffic would result in short-term increases in traffic volumes on study area roadways. With the addition of Project-related construction vehicle traffic to existing roadway volumes without a corresponding increase in the capacity of the roadway, there could be increased congestion and delay for vehicles. Construction truck traffic could temporarily reduce roadway capacities due to the slower travel speeds and larger turning radii of trucks.

Assessment of the short-term effect that Project construction traffic could have on local and regional roads is based on the following: (1) review of existing traffic volume information and, (2) consideration of both the percentage increase the Project construction traffic would contribute over existing conditions and the capacity of the road to handle the additional traffic. Because the number of vehicles on roads varies day-to-day and routinely fluctuates plus or minus 10 percent, a change in traffic volume of 10 percent or less is generally not perceptible to the average motorist. Traffic volumes on Project area roads are typically highest during morning and evening peak commute hours (generally between 6:00 a.m. to 8:00 a.m., and 3:30 p.m. to 5:30 p.m. in rural Fresno County); traffic increases that occur during these peak periods may exacerbate short-term congestion.

As shown in **Table 4.18-2**, ADT on study area roadways would increase by as little as 0.07 percent (I-5) and as much as 275.9 percent (West Adams Avenue) during the peak of Project construction activities. Increases in ADT would be smaller for the remaining construction duration. The magnitude of increases on I-5 is within the range of typical daily variation in traffic levels (usually on the order of ±10 percent) that might be expected on the major roadways serving the Project site, and transportation conditions on I-5 would remain substantially similar to current conditions. On West Adams Avenue, West Manning Avenue, and SR 33, however, the magnitude of increases in traffic volume (greater than the above-cited ±10 percent typical daily variation in traffic levels) would be noticeable to the average motorist. However, based on the capacity of undivided two-lane roadways (approximately 2,800 vehicles per hour per lane) and the volumes shown in Table 4.18-2,

the daily traffic capacity of West Adams Avenue, West Manning Avenue, and SR 33, are adequate to accommodate the projected increase in traffic (Transportation Research Board 2020).

TABLE 4.18-2
AVERAGE DAILY TRAFFIC DURING PEAK OF PROJECT CONSTRUCTION

Roadway	Existing ADT	Project Traffic ADT	Percent Increase ADT
SR 33	1,790	357	19.9%
I-5	41,500	294	0.7%
West Manning Avenue	1,055	307	29%
West Adams Avenue	187	329	275.9%

NOTES:
ADT – average daily traffic
Project traffic ADT adjusted to account for additional water truck trips not considered in the initial traffic stud; however, if onsite water is used, then no offsite water truck trips would occur and the Project ADT would be lower than shown.
SOURCES: Dudek 2021 (Appendix K); Caltrans 2019.

While the increase in traffic volume on SR 33 and West Manning Avenue would be noticeable to motorists who regularly travel along these roadways, there would be sufficient capacity to accommodate the added traffic during the construction period. However, it is expected that most construction-related traffic would occur during commute hours when construction workers are traveling to and from the Project site, resulting in a potentially significant congestion impact on the affected roadways. To alleviate potential traffic congestion and associated conflicts, a construction and decommissioning traffic management plan is recommended. Because the traffic management plan requires provisions for signage, a mechanism for input on the plan from Caltrans and Fresno County, and a plan to allow ingress and egress of emergency vehicles, this mitigation measure would reduce the potentially significant effects of short-term and intermittent construction-related congestion caused by construction and decommissioning vehicles/equipment on local roadways. Implementation of **Mitigation Measure 4.18-1, Construction and Decommissioning Traffic Management Plan** would reduce the impact of Project construction traffic on study area roadways during peak commute hours to a less-than-significant level.

The Traffic Study prepared for the Project (see Appendix K) included an analysis of potential pavement impacts, as required by Fresno County. Pavement impacts are analyzed based on a comparison of the TI with and without the Project. Based on the County's thresholds, the TI analysis concluded that construction of the Project would result in a significant impact to the pavement on two study area roadways: West Manning Avenue and West Adams Avenue, between SR 33 and the Project driveways. Because existing (pre-construction) road conditions would be identified and documented under Mitigation Measure 4.18-2, and a fair share road repair agreement would be required by Mitigation Measure 4.18-3, the Project's potential impact on roadways during construction would be reduced and made consistent with the County's standards. Implementation of **Mitigation Measure 4.18-2** and **Mitigation Measure 4.18-3** would reduce the impact of Project construction traffic on pavement conditions to a less-than-significant level.

Transit, Bicycle, and Pedestrian Facilities

The Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Fresno County's General Plan includes policies regarding access and safety standards of roadway facilities, bike facilities, and public transit. Although the General Plan seeks to coordinate multiple forms of transportation, including cars, commercial vehicles, buses, transit, bicycles, and pedestrian traffic, the General Plan does not contain specific policies governing pedestrian traffic. In addition, the following two plans have been adopted to address non-motorized transportation systems and identify barriers to trails and bikeways: the Regional Bicycle and Recreational Trails Master Plan (Fresno County 2013), and the Fresno County Regional Active Transportation Plan (Fresno COG 2018).

The Project is consistent with the General Plan policies, the Regional Bicycle and Trails Master Plan, and the Fresno County Regional Active Transportation Plan because there is no public transportation service or dedicated pedestrian or bicycle facilities on roadways that would be used to access the Project site, and because neither SR 33, nor other roadways that would be traveled by Project traffic are listed within the Fresno County General Plan Transportation and Circulation Element as an "existing or planned bikeway." Similarly, the Project site would not introduce a barrier to non-motorized travel due to the proposed lack of roadway improvements. Therefore, the Project would not conflict with adopted policies, plans, or programs supporting alternative transportation. The Project also would not decrease the performance or safety of public transit, bicycle, or pedestrian facilities because there are no facilities in the affected area. Therefore, the Project would cause no impact related to this criterion.

Operation and Maintenance

Operation and maintenance activities would occur over a 35-year period, which corresponds to the anticipated operational life of the Project. As stated previously, operation and maintenance of the Project would generate approximately 14 daily vehicle trips during operation and maintenance. The addition of such a small number of vehicles to the roadway network would not have a discernable effect on roadway operations. As such, Project operation would have a less-than-significant impact on study area roadways.

Decommissioning

Decommissioning impacts would be relatively similar to those identified for construction of the Project. Thus, although both short-term and temporary, decommissioning of the Project would result in a potential significant impact with respect to study area roadway conditions and pavement conditions. Mitigation Measures 4.18-1, 4.18-2, and 4.18-3 would reduce the impact of Project decommissioning traffic on study area roadway pavement conditions and operating conditions during peak commute hours to a less-than-significant level.

> **Mitigation Measure 4.18-1: Construction and Decommissioning Traffic Management Plan**
>
> Prior to the issuance of construction or building permits and the issuance of decommissioning authorizations, the Project owner and/or its construction contractor shall prepare and submit a Traffic Management Plan to the Fresno County Public Works

Department and the California Department of Transportation, District 6, as appropriate, for approval. The Traffic Management Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following elements:

- Temporary Traffic Control (TTC) plan that addresses traffic safety and control through the work zone, including during temporary lane closures (if needed) to accommodate materials delivery, transmission line stringing activities, or any other utility connections;
- Identify the timing of deliveries of heavy equipment and building materials;
- Requirement for designated construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed;
- Requirement to place temporary signage, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
- Ensure access for emergency vehicles to the Project site;
- Access to adjacent properties shall be maintained;
- Specify both construction/decommissioning-related vehicle travel and oversize load haul routes, minimizing construction/decommissioning traffic during the a.m. and p.m. peak hour, distributing construction/decommissioning traffic flow across alternative routes to access the Project site, and avoiding residential neighborhoods to the maximum extent feasible.
- Requirement to obtain all necessary permits for the work within the road right of way or use of oversized/overweight vehicles that would utilize County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Fresno County Divisions of Public Works and Planning.

The Traffic Management Plan elements listed above would reduce the potentially significant effects of short-term and intermittent construction-related congestion caused by construction and decommissioning vehicles/equipment on local roadways.

Mitigation Measure 4.18-2: Preconstruction and Pre-Decommissioning Road Survey Report

Prior to Project construction and decommissioning, a preconstruction report and a pre-decommissioning report shall be prepared by a qualified registered engineer, retained by the Project owner, to include a detailed analysis of road suitability to accommodate haul trucks during Project construction and decommissioning. The report shall be submitted to the Fresno County Department of Public Works and Planning. Prior to initiating the preconstruction or decommissioning report, the proposed methodology shall be presented to the Fresno County Department of Public Works and Planning for review and approval.

Improvements to existing roads, to be implemented by the Project owner, may be necessary based on the findings of the report.

Mitigation Measure 4.18-3: Road Repair Agreement

Prior to the start of construction, the Project owner shall enter into a secured agreement with the County to ensure that the Project contributes its fair-share portion toward repairs of County roads that are demonstrably damaged by this Project including but not limited to West Manning Avenue and West Adams Avenue, between SR 33 and the Project driveways, and South Monterey Avenue. Subject to the discretion of the County of Fresno and Caltrans District 6, roadway impacts shall be mitigated either by construction of an overlay, reconstruction of the pavement section, or by participating financially for the costs of the mitigation to the extent of the Project's fair share (Fresno County 2018).

Significance after Mitigation: Less than Significant.

The implementation of Mitigation Measure 4.18-1would reduce the impact to a less-than-significant level because vehicle access on roadways adjacent to the Project site would be safely maintained and delays caused by additional Project-related traffic would be minimized, with an emphasis on peak hour conditions when roadway volumes are highest. The implementation of Mitigation Measures 4.18-2 and 4.18-3 would reduce the impact to a less-than-significant level because the Project owner would provide for roadway pavement improvements on roadways affected by Project construction, consistent with the County's standards.

Criterion b) Whether the Project would conflict or be inconsistent with CEQA Guidelines section 15064.3(b).

Impact 4.18-2: The Project would not conflict or be inconsistent with CEQA Guidelines Section 15074.3(b). (*Less Than Significant Impact*)

As noted in CEQA Guidelines Section 15064.3(a), "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project," where, in accordance with guidance provided by the Governor's Office of Planning and Research, automobiles refer to on-road passenger vehicles, specifically cars and light trucks (OPR 2018). While heavy vehicles need not be included in the VMT analysis based on the CEQA Guidelines, they nonetheless were included in this analysis, resulting in a conservative estimate of Project-generated VMT.

The Fresno COG adopted transportation significance thresholds and screening criteria based on VMT in July 2020 (Fresno COG 2020). According to the guidance, a detailed transportation VMT analysis is required for all land development projects, except those that meet one of four designated screening criteria. A project that meets at least one of the screening criteria would be presumed to result in a less-than-significant VMT impact due to the project characteristics and/or location. The Project would meet the trip generation screening criterion, which states that a project that generates fewer than 500 ADT would result in a less-than-significant VMT impact. As discussed in Section 4.18.3.1, *Methodology*, the Project would generate a maximum of

422 vehicle trips during the Project construction and Project decommissioning phases, and 14 vehicle trips during Project operation and maintenance phase. Therefore, the Project would not result in a substantial increase in VMT that would conflict or be inconsistent with CEQA Guidelines Section 15074.3(b). This impact would be less than significant.

Mitigation: None required.

Criterion c) Whether the Project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact 4.18-3: The Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). ***(Less Than Significant Impact)***

Construction of the Project would require the delivery of heavy construction equipment and facility materials, some of which may require transport by oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space.

Construction-related oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and California Streets and Highway Code. California Highway Patrol escorts may be required at the discretion of Caltrans and Fresno County, and would be detailed in respective oversize load permits. Due to the rural nature of the area roads and relatively low traffic volumes, construction vehicles are not anticipated to cause hazards to other roadway users traveling to and from the Project site. Furthermore, the Project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the roadways surrounding the Project site.

Access to the Project site would be provided from West Manning Avenue and West Adams Avenue. All access points would be required to conform with Fresno County standards (per General Plan Policies TR-A.3, TR-A.5, and TR-A.8), ensuring that corner sight distance requirements are followed (though the flat terrain is assumed to not make sight distance an issue of concern). These design and construction requirements would ensure that Project elements would not increase transportation-related hazards. The Project also would be subject to the requirements of the current Fire Code and Building Code, and Project plans would be reviewed by the Fresno County Fire Protection District (FCFPD) for appropriate access design prior to the issuance of building permits. Impacts associated with transportation-related hazards resulting from a Project geometric design feature or incompatible uses would be less than significant.

Mitigation: None required.

Criterion d) Whether the Project would result in inadequate emergency access.

Impact 4.18-4: The Project would not result in inadequate emergency access. (*Less than Significant Impact*)

The Project site is located in a rural area with multiple access roads allowing adequate egress/ingress to proposed solar PV generating components, the substation, and other solar facility infrastructure in the event of an emergency. Additionally, as part of the Project, a 20-foot-wide perimeter road inside the fence line would be constructed, and existing interior access roads would be utilized and improved (up to 15-feet wide with a minimum of 3 feet of clearance on either side) for interior access and maintenance purposes. Therefore, the Project would allow for adequate emergency access to, from, and within the Project site. The Project also would be subject to the requirements of the current Fire Code and Building Code, and Project plans would be reviewed by the FCFPD for appropriate access design prior to the issuance of building permits.

As described above under Impact 4.18-1, increased Project-related operational traffic would not result in a substantial change to operating conditions on study area roadways. Furthermore, the Project would not require closures of public roads, which could inhibit access by emergency vehicles. During site clearing and construction of the Project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., slowing vehicles traveling behind the truck). However, given that there are no businesses, residences, or emergency response stations in the immediate vicinity of the Project site, and the number of ways to navigate around the Project site using alternative local routes, it is not considered likely that heavy construction-related traffic, which would be attenuated by being dispersed throughout the day, would result in inadequate emergency access.

Mitigation: None required.

PG&E Infrastructure

As described in Chapter 2, *Project Description*, energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Tranquillity Switching Station through an extension to an existing 230 kV gen-tie line. According to the preliminary Project construction schedule, which is provided in Appendix K, the analysis assumes that the new transmission poles would be constructed within the timeframe considered as part of the peak-month Project construction analysis presented above. Furthermore, no additional vehicle trips (workers or trucks) would be needed to operate and maintain, or to decommission the PG&E infrastructure that have not already been accounted for in the discussion of Project operation and maintenance and decommissioning described above. Therefore, the impacts on traffic described above for the Solar Facility under Impacts 4.18-1 through 4.18-4 apply to the PG&E infrastructure component of the Project.

While the Traffic Study prepared for the Project (Appendix K) does not specifically calculate the number of truck and passenger vehicle trips that would be generated by construction of PG&E infrastructure, it is reasonable to assume that the number would represent a small fraction of the trips estimated for construction of the Project as a whole because of the comparatively smaller scale of construction intensity in terms of equipment, materials, and construction workers needed for the 0.2-mile gen-tie line extension. For this reason, the construction of PG&E infrastructure

would not result in a potentially significant impact related to Impact 4.18-1 and, therefore, would not on its own require the implementation of Mitigation Measures 4.18-1, 4.18-2, or 4.18-3. The combined impacts of the Project and PG&E infrastructure would be less than significant with mitigation incorporated.

4.18.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 – Reduced Acreage Alternative

Under Alternative 1, a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage would be constructed, compared to the Project's 200 MW with 184 MW battery storage on upon approximately 2,000 acres. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. Compared to the Project, the disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce the Project's potential significant impacts relating to vehicle miles traveled and traffic.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, or related facilities would be constructed, operated, maintained, or decommissioned on the Project site. No structures would be erected, and no Project-generated traffic would occur. The Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Roadways would continue to be utilized as under existing conditions. Because there would be no change (attributable to the Project) relative to baseline conditions, the No Project Alternative would cause no impact to Transportation.

4.18.4 Cumulative Analysis

The potential for cumulative transportation impacts exists where there are multiple projects proposed in an area that would result in overlapping vehicle use of the surrounding roadway network. The Project could contribute to cumulative effects to transportation from the start of construction through the conclusion of decommissioning and site restoration activities. For the purposes of the cumulative analysis of transportation impacts, the geographic scope of the cumulative effects analysis considers each of the roads and roadway segments that could be affected by the Project and alternatives (e.g., I-5, SR 33, West Adams Avenue, West Manning Avenue).

As explained in Section 4.1.3, *Cumulative Effects Approach*, in Chapter 4, *Environmental Analysis,* and as identified in Table 4.1-1, *Cumulative Projects List*, past, present, and reasonably foreseeable future actions make up the cumulative scenario. The ongoing impacts of past projects are accounted for as part of baseline conditions for the Project, and are described in Section 4.18.1, *Setting*, above. Specific past projects that continue to contribute traffic in the

study area include the existing Tranquillity and Adams East solar projects and PG&E's operation of the Tranquillity Switching Station. The Little Bear Solar Project could potentially contribute traffic to SR 33, as it is located approximately 8 miles north of the proposed Project site. However, given its distance from the Project site, the potential for its traffic to combine with traffic caused by the Project as a potential cumulative effect may be reduced as a result, depending on the availability of other points of ingress and egress along SR 33 between the Little Bear Solar Facility and the Project site. Other present and reasonably foreseeable future projects that would or could contribute to the cumulative condition are identified in Table 4.1-1. Such projects include the Scarlet and Luna Valley solar projects, which would be located adjacent to the Project site on SR 33 and West Manning Avenue.

The Traffic Study prepared for the Project (Appendix K) estimated the cumulative project trip generation using the project size and number of workers provided in the *Luna Valley Solar Project Report* (February 2020) and the *Scarlet Solar Energy Project Initial Study* (September 2018). Although an estimate of number of trucks that would be required for construction of the Scarlet and Luna Valley solar projects was not provided in the referenced documents, the Traffic Study estimated the number of trucks for these cumulative projects to provide an overall cumulative projects trip generation. To assess a reasonable worst-case scenario, peak construction trip generation was estimated for the cumulative projects and used in the near conditions' operational analysis. The cumulative projects are forecast to generate approximately 2,054 daily trips, 880 AM peak hour trips, and 880 PM peak hour trips. Adjusted for PCE, the cumulative projects are forecast to generate approximately 2,836 daily trips, 978 AM peak hour trips, and 978 PM peak hour trips. Trip distributions and assignments for the cumulative projects were developed using the available environmental documents and assuming logical commute corridors, similar to the Project. The trips generated by the cumulative projects were distributed through the study area network and assigned to the study roadway segments. A growth of 1 percent per year was applied to the existing peak-hour and average daily traffic volumes conducted in March 2021 to reflect cumulative (year 2023) conditions.

Direct and indirect effects of the Project and alternatives on transportation are described in Sections 4.18.3.2, *Direct and Indirect Effects of the Project*, and 4.18.3.3, *Direct and Indirect Effects of Alternatives*. As stated above, based on temporary (construction and decommissioning) and long-term (operation and maintenance) impacts of the Project or an alternative on traffic conditions, West Manning Avenue and SR 33 near the Project site may experience congested conditions during peak commute hours. Given that West Manning Avenue and SR 33 would still be able to accommodate a substantial amount of additional traffic, based on projected hourly traffic volumes and the roadway capacities, it is possible (although not likely) that Project construction-generated traffic, when combined with traffic generated by construction activities associated with the adjacent Scarlet Solar and Luna Valley solar projects, which are also anticipated to use SR 33, could combine to cause a significant adverse cumulative impact relating to traffic conditions on SR 33. Accordingly, the County has considered whether the Project's incremental contribution to traffic would be cumulatively considerable and has determined that, in the absence of mitigation, there would be a cumulative effect. **Mitigation Measure 4.18-1** (see discussion above) would require the Project owner to prepare a Construction and Decommissioning Traffic Management Plan. The purpose of this plan is to ensure that the necessary permitting of any oversize vehicles used on public roadways during these phases of the Project would occur, and that the County

would have sufficient information about anticipated delivery times and vehicle travel routes (in advance) to work with other project owners to minimize construction and decommissioning traffic during peak a.m. and p.m. hours. The plan also provides for the necessary coordination with emergency services providers to assure adequate access and reduce conflicts on shared roads. With the implementation of Mitigation Measure 4.18-1, the Project's incremental contribution to cumulative transportation impacts during the construction and decommissioning phases would not be cumulatively considerable.

During the operation and maintenance phase, traffic associated with the Project or an alternative would not substantially increase daily trips on any of the study area roadways. Thus, neither the Project nor an alternative would cause or contribute to a significant adverse cumulative impact relating to operational traffic.

4.18.5 References

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4.19 Utilities and Service Systems

This section identifies and evaluates issues related to Utilities and Service Systems in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments relating to Utilities and Service Systems (Appendix A, *Scoping Report*).

This analysis is based in part on the Water Supply Assessment prepared for the Project by Dudek in November 2020 and updated/appended in June 2023 (Appendix C). The preparers of this Draft EIR independently reviewed this and other materials prepared by or on behalf of the Applicants and determined them to be suitable for reliance on (in combination with other materials included in the formal record) in the preparation of this EIR.

4.19.1 Setting

4.19.1.1 Study Area

For the purposes of this analysis, the study area includes the service areas of the utility or service systems (water supply, wastewater, stormwater, solid waste disposal, gas and electrical, and telecommunication utilities) that would provide service to the Project site.

4.19.1.2 Environmental Setting

Water Supply

The Project is located within the San Joaquin Valley Groundwater Basin, Westside Subbasin. The Westside Subbasin is within Fresno and Kings counties, covering 927 square miles. The subbasin is bordered by the Diablo Range to the west and other groundwater subbasins along its north, east, and southern boundaries; the Pleasant Valley Subbasin is located to the southwest, Tulare Lake Subbasin to the south, Kings Subbasin to the east, and the Delta-Mendota Subbasin to the east and north. A majority of the land overlying the San Joaquin Valley Groundwater Basin coincides with the Westlands Water District (WWD) service area (Appendix C).

The WWD is the largest agricultural water district in the United States, providing water to users in western Fresno and Kings counties, including the agricultural areas surrounding the Project site. WWD uses a combination of imported surface water, local groundwater, and local surface water to serve its customers. Surface water supplies are imported from the Central Valley Project (CVP) using the Delta-Mendota Canal and the San Luis Canal. WWD has an entitlement from the CVP to a supply of 1,195,383 acre-feet of CVP water annually. In some years, WWD may acquire additional water pursuant to its entitlements or from other water sources; in other years, depending on drought conditions and water supply availability in the Bay Delta, the total CVP supply may not be delivered (WWD 2021). WWD does not deliver treated water for human consumption and is not considered a public water system. The Project site is not connected to a public water system. Water provided by WWD for solar development in its service area is considered Municipal and Industrial (M&I) water.

The WWD is the primary Groundwater Sustainability Agency[1] (GSA) for the Westside Subbasin and, in this role, prepared a Groundwater Sustainability Plan[2] (GSP) consistent with the requirements of the Sustainable Groundwater Management Act (see Section 4.19.1.3, *Regulatory Setting*, for more information). The GSP for the Westside Subbasin projected a sustainable yield of 294,000 acre-feet per year (AFY) based on projected groundwater pumping and decline in projected groundwater storage (WWD 2022).

Solid Waste Management

The Fresno County Resources Division is responsible for solid waste coordination and disposal activities within the County. The division has a number of facilities that accept solid waste in the vicinity of the Project site. The American Avenue Landfill is owned and operated by Fresno County, located within the City of Kerman, approximately 14 miles northeast of the Project site (Fresno County 2021a). The landfill is permitted to receive 2,200 tons of waste per day; it has a remaining capacity of approximately 29,358,535 cubic yards and is expected to reach its permitted capacity in 2031 (CalRecycle 2019a). The next nearest landfill is the Billy Wright Disposal Site, which is permitted to receive 1,500 tons of waste per day; it has a remaining capacity of approximately 11,370,000 cubic yards and is expected to reach its permitted capacity in 2054 (CalRecycle 2019b). The Project site is located within the Mid Valley Disposal Company service area which has multiple locations including the Kerman Material Recovery Facility (MRF) Transfer Station, Fresno MRF Transfer Station, Kingsburg Transfer Station, and the Coalinga Transfer Station (Mid Valley Disposal 2021). The Shaver Lake Transfer Station is operated in partnership with Fresno County, Granite Solid Waste, and the U.S. Forest Service (Fresno County 2020a).

Wastewater

Wastewater service is not currently provided at the Project site. Within Fresno County, rural areas generally use on-site septic systems for wastewater disposal. Wastewater from the operation and maintenance (O&M) building would be discharged into a septic tank, if one is installed, where most of the solids would be removed. The septic tank would be 1,500 gallons and designed and constructed according to County requirements, as described in Chapter 2*, Project Description*. If no septic system is installed, then the Project would be served by portable toilets to be serviced and maintained by an outside vendor.

Stormwater

There is no existing stormwater drainage infrastructure located on-site. However, as described in Chapter 2, *Project Description*, the Project may include on-site detention basins to retain stormwater (and prevent runoff) if necessary. The basins would be expected to remain dry most of the year, except during or after a rain event. The topography of the site is generally flat and drainage impaired.

[1] Groundwater Sustainability Agencies are responsible for establishing Ground Water Sustainability Plans for subbasins which the agency overlays in order to support the Sustainable Groundwater Management Act (DWR 2021a).

[2] Groundwater sustainability plans are required to be developed by GSAs under the Sustainable Groundwater Management Act for high and medium priority basins (DWR 2021b).

Pacific Gas & Electric

Pacific Gas and Electric Company (PG&E) is an investor-owned utility company that provides electricity and natural gas supplies and services throughout a 70,000 square-mile service area that includes western Fresno County and the Project site (PG&E 2021).

4.19.1.3 Regulatory Setting

Federal

No federal regulations pertaining to Utilities and Service Systems apply to the Project.

State

The California Integrated Waste Management Act

The Integrated Waste Management Act was initiated in 1989 as Assembly Bill (AB) 939 and codified in Public Resources Code Section 40050 et seq. The Act required all California cities, and unincorporated portions of counties, and approved regional solid waste management agencies to divert a minimum of 25 percent of solid waste from landfills by 1995 and 50 percent by 2000. Cities and counties are required to maintain the 50 percent diversion specified by AB 939 past 2000 (Cal Recycle, 2021). Diversion includes waste prevention, reuse, and recycling. The Act resulted in the creation of the California Integrated Waste Management Board, which now is known as CalRecycle. Under the Act, jurisdictions also must submit solid waste planning documentation to CalRecycle. The Act also established a comprehensive statewide system of permitting, inspections, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types and amounts of waste generated. Construction of the Project would generate solid wastes and would be subject to diversion requirements consistent with local codes and the Integrated Waste Management Act.

Sustainable Groundwater Management Act

In 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA) into law. SGMA requires governments and water agencies of high and medium priority basins[3] to manage over drafting to bring groundwater basins to balanced levels of pumping and recharge. The Westside subbasin, managed by WWD, is identified as a high priority subbasin under SGMA and one in a condition of critical overdraft.

Executive Order N-7-22

In response to extreme and expanding drought conditions in California, Executive Order N-7-22 was issued 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-regulated medium or high-priority groundwater basin unless (1)

[3] Basin prioritization is a technical process undertaken by DWR pursuant to California Water Code Section 10933(b) that utilizes the available data and information to classify groundwater basins (based on population, public supply wells, groundwater reliance, and a number of factors) into one of four categories: high, medium, low, or very low priority.

the Groundwater Sustainability Agency managing the basin verifies in writing that the proposed groundwater extractions: (i) would be consistent with any applicable Groundwater Sustainability Plan, and (ii) 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 as an option to construct a new well to serve Project water demand, EO N-7-22 would apply. As the Westland Subbasin is defined as a high priority groundwater basin, WWD, the GSA 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 before Fresno County could permit this construction.

Universal Waste Rule

California's Universal Waste Rule is a set of regulations meant to ensure certain common hazardous wastes are disposed of safely and not trashed (Department of Toxic Substances Control 2010). Hazardous wastes include computers, televisions, batteries, mercury thermostats, other mercury-containing equipment, and other electronic devices. These wastes may not be disposed of in the trash. Regulated entities are held to specific requirements based on their classification. Requirements include using proper labels and markings for universal waste, having spill kits ready and available, complying with applicable requirements for hazardous waste, and providing personnel training to personnel who manage universal waste.

22 California Code of Regulations Division 4.5

Title 22 of the California Code of Regulations includes an array of requirements with respect to the disposal and recycling of hazardous and universal wastes, the use of which the Project may include. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transport, disposal and recycling of universal wastes, where universal wastes are defined as those wastes identified in Section 66273.9 of Title 22 of the California Code of Regulations, including batteries, electronic devices, mercury containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Title 22 Division 4.5 also provides restrictions and standards relevant to waste destination facilities and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule, as well as other additional waste handling and disposal requirements.

Utility Notification Requirements

California Government Code Section 4216 et seq. requires owners and operators of underground utilities to become members of, participate in, and share the costs of a regional notification center. Underground Service Alert North (USA North) is the notification center for the Project area. USA North receives planned excavation reports and transmits the information to all participating members that may have underground facilities at the location of excavation. (USA North 2018).

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates services and utilities and assures California's access to safe and reliable utility infrastructure and services. The essential services regulated include electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The CPUC regulates utility construction by PG&E and the other investor-owned utilities under its jurisdiction, including the location and relocation of power lines.

National Pollutant Discharge Elimination System Construction General Permit

Construction activities disturbing 1 acre or more of land that result in discharges to waters of the United States are subject to the permitting requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit) and must apply for Construction General Permit coverage. For all new projects, applicants must electronically file permit registration documents using the Stormwater Multiple Applications and Report Tracking Systems (SMARTS) and must include a Notice of Intent (NOI), risk assessment, site map, and stormwater pollution prevention plan (SWPPP) to be covered by the General Construction Permit prior to beginning construction. The risk assessment and SWPPP must be prepared by a State-Qualified SWPPP Developer (QSD). See Section 4.11, Hydrology and Water Quality, for a more detailed discussion relative to water quality and SWPPP requirements. The Project may require a SWPPP.

Local

Fresno County Construction and Demolition Debris Recycling Program

The Fresno County Construction and Demolition Debris Recycling Program (C&D Debris Recycling Program Department of Public Works & Planning Resource Division, 2021) contains the following requirements related to Utilities that are relevant to the Project:

1. Complete and submit a Waste Management Plan (WMP) for recycling a minimum of 65 percent of all nonhazardous waste, scrap, and debris generated for the scope of work covered by the building permit
2. During construction/demolition, collect data for your project's Waste Log, ensure that all subcontractors are familiar with the WMP, and have signed the Acknowledgement Form. Keep all weight/gate tags, receipts, and invoices for services to support the data on the Waste Log.
3. After your project is complete and 14 days prior to your project's final inspection, submit the completed Acknowledgement Form(s), Waste Log, and all supporting documents.

Fresno County Solar Facility Guidelines

Item 2 in the Fresno County Solar Facility Guidelines relates to Utilities and Service Systems (Fresno County 2017). It requires the following:

> Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the

allocations received from the irrigation district and the actual disposition of the water (i.e., utilized on-site or moved to other locations) for the last 10 years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.

See Appendix I-2 for a general analysis of the Project's consistency with the County's Solar Facility Guidelines.

Fresno County General Plan

The Fresno County General Plan Public Facilities and Services Element (2000) contains the following policies related to Utilities and Service Systems that are relevant to the Project (Fresno County 2000):

Policy PF-A.4: The County shall encourage the placement of irrigation canals and utility lines underground as urban residential, commercial, and industrial development takes place.

Program PF-A.A: The County shall ensure that infrastructure plans or area facilities plans are prepared in conjunction with any new or expanded community or specific plan and are reviewed and updated as needed. Such plans shall contain phasing and facility improvement time lines.

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.25: The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.

Policy PF-D.6: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.

Policy PF-E.7: The County shall require new development to pay its fair share of the costs of Fresno County storm drainage and flood control improvements within unincorporated areas.

Policy PF-E.11: The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.

Policy PF-E.13: The County shall encourage the use of natural storm water drainage systems to preserve and enhance natural drainage features.

Policy PF-E.14: The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.

Policy PF-E.16: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of road and bridges, and use of off-road vehicles. The County shall discourage grading activities during the raining season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

Policy PF-E.21: The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

Policy PF-F.1: The County shall continue to promote maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally-safe transformation of wastes.

Policy PF-F.4: The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

Policy PF-J.1: The County shall encourage the provision of adequate gas and electric, communications, and telecommunications service and facilities to serve existing and future needs.

4.19.2 Significance Criteria

The Project would result in significant impacts to utilities and service systems if it would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

d) 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;

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

4.19.3 Direct and Indirect Effects

4.19.3.1 Methodology

The analysis of Project effects related to Utilities and Service Systems addresses temporary construction-related and decommissioning-related impacts as well as longer-term impacts that could be caused during Project operation in connection with any Project-caused changes in service levels or capacity of the Utilities and Service Systems that service the Project site in a manner that could result in adverse changes to the physical environment.

4.19.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with respect to criteria a), b), d), and e) and no impact with respect to criterion c). The impact conclusions for the subset of the Project that is the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Impact 4.19-1: The Project would not result in the construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities that would cause significant environmental effects. (*Less than Significant Impact*)

Water

During construction, non-potable water could be provided by a new onsite well or existing on-site water infrastructure. WWD has allotted 2 acre-feet of water per 320 acres of acquired land for dust suppression as well as an additional 150 acre-feet per year for panel washing. It is estimated that construction of the Project would require 300-acre feet of groundwater over a period of 12-14 months, likely sourced from a proposed new groundwater well at the center of the site (Appendix C, *Water Supply Assessment and Evaluation, as updated*). Potable water would be provided for employee use by the construction contractor through deliveries to the site.

During the operation and maintenance phase, up to 2 AFY of water is expected to be used, which equates to an O&M water demand of up to 70 AF over the (35 year) life of the Project. This water would be supplied through a groundwater well to be installed, existing on-site water infrastructure, or imported/ delivered from off-site. In the event that a groundwater well was to be installed, the water could be treated (for selenium removal) using a reverse osmosis system or through ion exchange filtration, which would not require major construction. Water during O&M would be used for panel washing and for full-time employee use. Non-potable water use would be temporary and primarily for dust control during construction, decommissioning, and reclamation.

The Project's proposed new groundwater well would be subject to state and local regulatory requirements, which would include an evaluation pursuant to SGMA. As noted in the regulatory setting, because the Project proposes an option to construct a new well to serve Project water demand, the State's executive order regarding groundwater (EO N-7-22) would be applicable. As the subject groundwater basin, the Westland Subbasin, is defined as a high priority groundwater basin, WWD, the GSA 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 goals identified in the Westland Subbasin GSP before Fresno County could permit this construction.

Although the Project would require construction of a new groundwater well to serve the water demand posed by the solar facility, the installation of this well would not pose significant environmental effects. The proposed well would be subject to state and local regulatory requirements and could not be permitted if determined to adversely impact the groundwater basin. Therefore, impacts under this criterion would be less than significant.

Wastewater

New or expanded wastewater treatment facilities are not proposed, nor would they be required for the Project. Portable restroom facilities would be provided for construction workers during the up to 14- month duration of construction. During the O&M phase, sanitary facilities would likely be provided through a septic system at the proposed O&M building. The in-ground septic system would include a 1,500-gallon septic tank and leach field. Sanitary waste would be contained on-site and periodically removed by a septic maintenance provider. If a septic system is not installed, then portable restroom facilities would continue to be used at the Project site. It is anticipated that such facilities would also be temporarily placed on site during decommissioning. For these reasons, the Project would not require or result in the construction or relocation of new or expanded wastewater facilities that would cause an adverse environmental effect. Impacts would be considered less than significant.

Stormwater

If necessary, on-site stormwater detention facilities would be constructed to accommodate stormwater. No alteration of the off-site stormwater collection system is proposed or would be required for the Project. Site preparation and construction activities would be performed in accordance with a SWPPP or similar plan, which would incorporate stormwater BMPs to reduce runoff and other effects of erosion and sedimentation.

The Project is designed such that, once constructed, site drainage would continue to follow the natural drainage patterns except as collected in the on-site stormwater detention facilities, if constructed, based on site-specific hydrological analysis (Appendix C). See Section 4.11, Hydrology and Water Quality for additional detailed discussion. Project facilities would not obstruct site drainage or affect offsite flows. For these reasons, the Project would not require or result in the construction or relocation of new or expanded stormwater facilities outside the Project footprint, nor would the Project cause any changes in stormwater flow that would cause an adverse environmental effect. Impacts associated with the potential on-site stormwater detention facilities would be less than significant.

Electric Power

The Project would involve construction of a solar photovoltaic (PV) energy generating facility, energy storage system, and associated facilities. The solar facility would include arrays of solar PV modules (or panels) and support structures, low voltage direct current (DC) electricity to alternating current (AC) electricity power inverters and transformers or power conditioning stations, and an on-site substation. The energy storage system would include power conditioning systems, electrical wiring, switching, transformers, and would connect to the 34.5kV collection system in the Project substation.

With the exception of temporary overhead pole connections, no electrical power services would be required during construction and decommissioning. The Project would utilize power service from PG&E that would be provided through a connection to existing infrastructure. The connections proposed as part of the Project could result in potential environmental impacts as discussed in the various resource sections of this EIR. However, the Project would not result or

require the construction or relocation of new or expanded electric facilities beyond those analyzed as part of the Project. For this reason, impacts associated with new or expanded electrical facilities would be less than significant.

Natural Gas

Solar PV projects do not require the use of natural gas for the power generation process. For this reason, no natural gas facilities are proposed as part of the Project, nor would the Project result in the relocation or construction of new or expanded natural gas facilities that would cause an adverse environmental effect. There would be no impact.

Telecommunications Facilities

Telecommunications infrastructure to connect to existing local telecommunication services is proposed as part of the Project. As discussed in Chapter 2*, Project Description*, a telecommunication line comprised of fiber optic cable and/or 25-pair telephone line would be installed below ground or attached to existing distribution lines. The point of interconnection to the existing telecommunications facilities would be in a small telephone/fiber optic vault. The construction required to expand telecommunications services for Project purposes would generate a less-than-significant impact.

Criterion b) Whether the Project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

Impact 4.19-2: The Project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. (*Less than Significant Impact*)

A Water Supply Assessment (WSA) (Appendix C) was prepared for the Project to demonstrate the availability of water supply as a 20-year projection. The WSA concluded that an adequate water supply exists and could be accessed for construction and operational water demand during normal, single dry, and multiple dry years.

The WSA concluded that the projected inflow of groundwater between the years 2020 and 2040 would be 1,356,000 AFY. Based on this, safe yield for the Westside Subbasin is estimated to be 270,000 to 300,000 AFY. During construction, it is estimated that the Project would require up to 300 acre-feet of water provided through WWD or a groundwater well installed on site. Impacts to the Westside Groundwater Subbasin are accounted for in the WSA (Appendix C) and discussed in more detail in Section 4.11, Hydrology and Water Quality. Impacts associated with water demand during construction would not conflict with the groundwater sustainability goals of the subbasin and would be less than significant.

Water demand for O&M activities, estimated to be up to 2 AFY, could be met through local supplies and would be obtained either from WWD through the M&I metered system or through groundwater via an on-site well constructed as part of the Project. As noted in the environmental setting, WWD is the largest agricultural water district in the United States, providing water to

users in western Fresno and Kings Counties, including the area on and surrounding the Project site. WWD uses a combination of imported surface water, local groundwater, and local surface water to serve its customers. Surface water supplies are imported from the Central Valley Project (CVP) using the Delta-Mendota Canal and the San Luis Canal. WWD has entitlement from CVP to a supply of 1,195,383 acre-feet of CVP water during each year. In some years, WWD may acquire additional water pursuant to its entitlements or from other water sources, and in other years, depending on drought conditions and water supply availability in the Bay Delta, the total CVP supply may not be delivered (WWD 2021). WWD does not deliver treated water for human consumption and is not considered a public water system. The Project site is not connected to a public water system. However, water provided by WWD for solar development in its service area is considered M&I water. WWD indicated that it would make available up to 2 acre-feet of water per 320 acres of developed solar annually for operational water use (which equates to approximately 12.5 acre-feet annually for this 2,000-acre Project site). WWD has determined that there is adequate water to serve the Project and reasonably foreseeable future development. In the event that municipal and industrial-metered water is unavailable (if extreme conditions were to occur), the Project's operational water needs could be reduced or temporarily eliminated. Alternatively, water requirements during the operations and maintenance phase could be met through an on-site well, constructed as part of the Project for such a purpose.

The WSA (Appendix C) concluded that based on a review of available water supplies and groundwater conditions, including the sustainability goals and objectives in the GSP, there would be sufficient access to water to meet the Project's anticipated operations and maintenance demand even in multiple dry years. Because sufficient water is available either through WWD or through an onsite well, the impact would be considered less than significant.

Approximately 300 AF of water is estimated to be required to decommission the Project and reclaim the site to a condition comparable to pre-construction surface conditions. Although the WSA's water supply projection is limited to 20 years, which would expire before Project-related site decommissioning and restoration activities would begin, adequate water is expected to be available for this end-phase of the Project for the reasons explained in Section 4.11, *Hydrology and Water Quality*. Because sufficient water supplies would be available to serve the Project during decommissioning, the impact would be less than significant.

Criterion c) Whether the Project would result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The Project would not require new wastewater service connections during construction, operation and maintenance, or decommissioning. Portable restrooms would be provided for workers during construction and potentially also during the remainder of the Project if an on-site septic system is not installed. Nonetheless, the expectation is that restroom facilities for use during Project operation and decommissioning would be provided through installation of a new septic system at the proposed O&M building. The septic system would include a 1,500-gallon septic tank. Decommissioning-related sanitation needs would be served by the septic system and/or portable

restrooms. Because the Project would not require the use of wastewater treatment facilities, capacity exceedances would not occur. Therefore, there would be no impact. **(*No Impact*)**

Criterion d) Whether the Project would 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.

Impact 4.19-3: The Project would not 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. (*Less than Significant Impact*)

Approximately 22 cubic yards of solid waste per week would be generated during the construction phase. Such waste would consist primarily of cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools. Since the Project would be subject to the CalGreen Code and the Fresno County C&D Debris Recycling Program, which is intended to assist the County in compliance with the state (AB 939) solid waste reduction goals, materials such as metal and wood would be separated from the waste stream and recycled to the extent feasible. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site. Dumpsters would be collected as needed by a commercial service and delivered to a landfill, such as the American Avenue Landfill.

As described in Section 4.19.1, the American Avenue Landfill is permitted to receive 2,200 tons of waste per day and has a remaining capacity of approximately 29,358,535 cubic yards, and the Billy Wright Landfill is permitted to receive 1,500 tons of waste per day - it has a remaining capacity of approximately 11,370,000 cubic yards (CalRecycle 2019a, 2019b). The Project would generate approximately 22 cubic yards of solid waste per week during construction. The American Avenue Landfill would have adequate capacity to accept the Project's solid waste even if this amount were delivered in one day. The total construction waste generated by the Project would account for a less than significant amount of the landfill's remaining capacity. If the Project was decommissioned after the closure of the American Avenue Landfill, waste would be hauled to the next nearest landfill facility, the Billy Wright Landfill, which also was sufficient remaining capacity to meet potential Project demands. Therefore, landfill waste generated by the Project would not exceed its permitted daily tonnage or impair substantial long-term capacity. For these reasons, the Project would not contribute significantly to the impairment of solid waste reduction goals or generate waste in excess of State or local standards. The impact would be less than significant.

Mitigation: None required.

Criterion e) Whether the Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impact 4.19-3: The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. (*Less than Significant Impact*)

The Project would be required to comply with the CalGreen Code and the Fresno County C&D Debris Recycling Program, which is intended to assist the County in compliance with the solid waste reduction goals of AB 939. The program requires County of Fresno Building Permit Applicants to recycle a minimum of 65-percent of nonhazardous waste, scrap, and debris generated by work covered under the building permit.

As described in Chapter 2, *Project Description*, most of the waste generated during construction and demolition would be non-hazardous. Waste would be recycled when feasible and non-recyclables would be placed into dumpsters located on-site. A minimal amount of waste would be generated during O&M activities and during decommissioning and site reclamation. The majority of waste in these phases would be non-hazardous, and materials dismantled during decommissioning would be recycled or sold. Project construction and operation would comply with the construction and demolition debris recycling program by diverting, repurposing, or recycling non-hazardous waste to the maximum extent feasible, in compliance with the local requirements. Therefore, the impact would be less than significant.

PG&E Infrastructure

The PG&E infrastructure and improvements that would be needed to connect the Project to the grid would include an extension of an existing 230 kV transmission line (which connect the Project substation to the existing shared 230 kV transmission line) and an associated underground fiber optic line. The PG&E interconnection and related infrastructure would be limited to these structures and would not result in impacts related to the relocation or construction of new or expanded water, wastewater, stormwater, or natural gas facilities, and the new telecommunication facilities (i.e., the fiber optic line) would not result in a significant impact or noncompliance with federal, state, or local standards in regard to solid waste. For these reasons, as a subset of the impacts of the Project as a whole, the PG&E infrastructure would result in less-than-significant impacts to utilities and service systems. In addition, the combined impacts of the Project and PG&E infrastructure would be less-than-significant.

4.19.3.3 Direct and Indirect Effects of Alternatives

Alternative 1 Reduced Acreage Alternative

Compared to the Project, Alternative 1 would develop a solar facility on a 20-percent reduced acreage footprint. A Reduced Acreage Alternative would equate to a solar energy project on approximately 1,600 acres with the capacity to generate approximately 160 MW with 147 MW battery storage, compared to the Project's 200 MW with 184 MW battery storage . All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce impacts. For example, a smaller area of disturbance would require less water for dust control, placing less

demand on regional water resources. Impacts to utilities and service systems would be similar in type to those identified in this section and also less than significant with no mitigation required.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed solar, battery storage, or related facilities would be delivered to the Project site or constructed, operated, maintained, or decommissioned there. The existing well would not be returned to production, no power or communications lines would serve the Project site, and no solid waste would be generated on-site. Instead, the Project site would continue to be used periodically for dry-farmed agriculture and/or disked and left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Utilities or Service Systems.

4.19.4 Cumulative Analysis

As described in Section 4.19.3.2, the Project would have a less-than-significant impact to utilities and service systems, associated with the construction of water, wastewater, stormwater, and telecommunication facilities primarily internal to the Project site. This analysis considers the contribution of these incremental, Project-specific impacts to the utilities and service systems that could serve the Project, when viewed in combination with the impacts of other past, present, and reasonably foreseeable future projects.

Potential cumulative impacts to landfill capacity would impact the area served by the American Avenue Landfill. As noted in the regulatory section discussion of the Integrated Waste Management Act, Fresno County is required to identify an area for the location of new solid waste transformation or disposal facilities if the County determines the existing capacity (American Avenue Landfill) will be exhausted in 15 years.

In compliance with the Act, it is anticipated that Fresno County would have at least 15 years of remaining capacity at the time of decommissioning and reclamation and that waste could be disposed of within the limits of available permitted capacity. The same requirements for waste diversion and recycling that would apply to the Project also would apply to other cumulative projects. For this reason, the cumulative scenario for solid waste is not expected to exceed the permitted capacity of available landfills and the Project's incremental contribution to capacity concerns would not be a cumulatively considerable contribution to any significant cumulative effect.

Water demand during project O&M would be limited to resources required for panel washing and potable water for full-time employee use. This demand would be met by WWD and/or through an installed well. Water provided by WWD would be managed by the District in consideration of long-term supplies. The adjacent Luna Valley and Scarlet solar projects also would be required to complete similar WSAs applicable to those development projects, which would ensure that sufficient water supplies would be available to meet their water demands during construction. For these reasons, the Project would not have a cumulatively considerable contribution to a

cumulative impact on demand for groundwater resources. Please refer to the Water Supply Assessment (Appendix C) for additional information regarding water availability.

An onsite septic system, if implemented, would be subject to Fresno County regulatory requirements for onsite waste systems, as would other projects implementing such systems. Stormwater discharge is regulated by the NPDES discharge permit program. Compliance with the regulatory requirements would reduce environmental effects associated with these systems. As noted above, the Project would implement best management practices to limit runoff and control erosion during construction, as required, and in compliance with the terms stipulated by SWPPP and associated conditions of the Construction General Permit or, in the absence of a nexus with waters of the United States, a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation.

Because the septic systems would have to conform to local setback rules (subject to Fresno County review and approval) and be designed in a manner consistent with state water quality requirements, when considered in combination with other projects with similar septic or stormwater detention systems, the Project's incremental contribution to impacts would not be cumulatively considerable. Impacts would be cumulatively less than significant.

4.19.5 References

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4.20 Wildfire

This section identifies and evaluates issues related to wildfire in the context of the Project and alternatives. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments pertaining to wildfire or fire risk. See Appendix A, *Scoping Report*.

4.20.1 Setting

4.20.1.1 Study Area

For the purposes of this analysis, the study area consists of the Project site and the immediate surrounding area.

4.20.1.2 Environmental Setting

Fire Protection Services

Fire protection services in the vicinity of the Project site are provided by the Fresno County Fire Protection District (FCFPD). Section 4.16, *Public Services*, outlines additional details regarding fire protection services. The closest fire station (Station 96) is in the City of Mendota, approximately 8 miles north of the Project site. The FCFPD, as the local responsible agency, would have primary responsibility for responding to fires for the Project site and surrounding area.

CAL FIRE-Designated Wildfire Hazard Zones

CAL FIRE has published and proposed Fire Hazard Severity Zones (FHSZ) for State Responsibility Areas (SRAs) lands and a separate draft Very High Fire Hazard Severity Zone (VHFHSZ) Maps for Local Responsibility Areas (LRAs). SRAs are the official boundaries where the State of California (through CAL FIRE) has the primary legal and financial responsibility for the prevention and suppression of wildland fires. LRAs include incorporated cities and densely populated areas with fire protection typically provided by city fire departments, fire protection districts, counties, and/or joint agreements with CAL FIRE. FHSZ Maps designate fire hazard areas as either “Moderate,” “High,” “Very High,” or “Unzoned.” The Project site is located in an area designated as “LRA Unzoned” with areas of “LRA Moderate” in the vicinity of the Project site (CAL FIRE, 2007b).

California Public Utilities Commission-Designated Wildfire Hazard Zones

Pursuant to its Fire Safety Rulemaking, the California Public Utilities Commission (CPUC) mapped high fire threat areas where more stringent inspection, maintenance, vegetation clearance, and wire clearance requirements (as required by CPUC General Orders 95, 165, and 166, described in Section 4.20.2, below) would be implemented due to the elevated risk for power line fires. The CPUC High Fire Threat District (HFTD) Map identifies three tiers of elevated risk for

fires associated with utilities (i.e., Tier 1, 2, and 3). The HFTD Map includes such criteria as fire hazards associated with historical powerline-caused wildfires and current fuel conditions, and the mapping effort scores geographic areas based on where fires start, as opposed to where potential fires may cause impacts. The Project site is not located in a CPUC-designated High Fire Threat District (CPUC 2017).

Fire Environment

Fire behavior is primarily dependent upon fuels (e.g., vegetation), weather (e.g., wind, temperature, and humidity), and topography (e.g., slope, elevation, and aspect). The combination of these three factors can help or hinder the spread of a wildfire if it occurs.

Topography

Topographic features can strongly influence fire behavior and can determine how fast a fire moves through an area. Fire typically moves more quickly uphill, compared to either downhill or on flat terrain. As heat rises in front of the fire, it more effectively preheats and dries upslope fuels, providing for more rapid combustion (Bennett 2017).

Fresno County can be categorized into three geographical regions as distinguished by their topography. The three regions include: 1) broad, flat valley floors that generally slope from the southeast to the northwest; 2) foothills and moderately high mountains (Coast Ranges) in the west; and 3) foothills and high mountains (Sierra Nevada) in the east. Approximately 55 percent of the County is mountainous, and 45 percent is valley land. Elevations range from 100 to 400 feet on the valley floor to 4,000 feet in the Coast Ranges and more than 14,000 feet in the Sierra Nevada (Fresno County 2018). The Project site is located within the first geographical region, which contains predominantly flat valley floors with a gentle or gradual slope.

Vegetation/Fuels

Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Additional fuel sources can include manmade structures, such as homes, buildings, and other associated combustible materials. Fuel types within the Fresno County area include annual grasses, deciduous oaks, and heavy brush in the Coast Range of western Fresno County; seasonal grasses, deciduous and evergreen oaks, brush and grass in the lower and mid-elevations of central and eastern Fresno County, and conifers in the higher elevations of eastern Fresno County (Fresno County 2018). The Project site and surrounding area contains predominantly agricultural fallow land and contains few to no trees, brush, or branches onsite. For additional description of vegetation types surrounding the study area, see Section 4.5, *Biological Resources*.

Weather/Climate

The climate varies among the three geographical and topographical regions described above. Summers are long, hot, and dry in the valley; moderate-to-hot in the Coast Ranges; and relatively cool in the high elevations of the Sierra Nevada. Winters in the valley and Coast Ranges are short and mild with light rain in the valley and moderate rainfall in the Coast Ranges. In the Sierra

Nevada, winters vary from short and mild with frequent rain and some snow to moderately severe with frequent snow. Most of the seasonal precipitation occurs between October and April (Fresno County 2018). The study area is in the valley, which experiences long, hot, and dry summers and short and mild winters.

Impacts of Wildfire on Air Quality

As wildfires burn fuel, large amounts of carbon dioxide, black carbon, brown carbon, and ozone precursors are released into the atmosphere. Additionally, wildfires emit a substantial amount of volatile and semi-volatile organic materials and nitrogen oxides that form ozone and organic particulate matter. These emissions can lead to harmful exposures for first responders, nearby residents, and populations in regions which are further from the wildfires (NOAA 2021). Exposure to these pollutants can cause asthma attacks, coughing, and shortness of breath. Chronic exposure to these pollutants can increase the risk of developing chronic health conditions such as heart disease, diabetes, and cancer (Hamers 2018; Milman 2018). These pollutants are described in more detail in Section 4.4, *Air Quality*.

Fire History

Wildfire is an ongoing concern in Fresno County and throughout California. Historically, the fire season extends from June through October of each year during the hot, dry months. Since 2010, however, the fire season has been getting longer: typically starting in May and extending into November. Regardless of fire "season," wildfires can occur any time of the year. According to Figure 4.54 included as the *Fresno County Fire History Map* within the Multi-Jurisdictional Hazard Mitigation Plan (HMP), few to no fires are known to have occurred within 15 miles of the Project site, and the Project site is not located in an area categorized as having an increased hazard severity risk (Fresno County 2018).

According to the 2005 Prefire Management Plan for CAL FIRE's Fresno-Kings Unit, an ignition source analysis determined four primary ignition sources (or causes): arson (311 fires), equipment use (315 fires), debris burning (158 fires), and "other undetermined ignition sources" (535 fires). Remaining causes in 2004 were associated with lightning, campfires, smoking, vehicles, electrical power, and playing with fire (Fresno County 2018). During the drafting of the 2009 HMP, the Fresno-Kings Unit experienced 120 to 200 fires a year in the SRA and 1,400 to 1,600 fires in the LRA (Fresno County 2018).

4.20.1.3 Regulatory Setting

Federal

North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority comprising 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North America. To achieve its goal, NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel (NERC 2020). In order to improve the reliability of regional electric transmission systems, NERC developed a transmission vegetation management

program that is applicable to all transmission lines operated at 200 kilovolts (kV) and higher, as well as lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region. The program applies to PG&E's transmission line-related vegetation management activities in the Project area such as NERC Standard FAC-003, Transmission Vegetation Management.

The program, which became effective on April 7, 2006, establishes requirements of the formal transmission vegetation management program, which include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be no less than those set forth in the IEEE Standard 516-2003 (*Guide for Maintenance Methods on Energized Power Lines*) (IEEE 2003), which establishes minimum vegetation-to-conductor clearances to maintain the electrical integrity of the electrical system; these are incorporated into PG&E's Fire Prevention Plan and would apply to the PG&E infrastructure.

State

2019 Strategic Fire Plan for California

Developed by the Board of Forestry and Fire Protection (the Board), the Strategic Fire Plan outlines goals and objectives to implement CAL FIRE's overall policy direction and vision. The 2019 Plan demonstrates CAL FIRE's focus on: 1) improving its core capabilities; 2) enhancing their internal operations; 3) ensuring health and safety; and 4) building an engaged, motivated and innovative workforce. CAL FIRE provides direction for fire prevention and enforcement within the SRA using fire resource assessments, a variety of available data, mapping, and other tools. Pre-fire management activities, including prescribed burning, fuel breaks, forest health treatments, and removal of hazardous vegetation, are conducted at the unit level under the guidance of CAL FIRE program managers. Through the 2019 Strategic Plan, CAL FIRE also delivers Land Use Planning and Defensible Space Inspection programs to the local level across the state (CAL FIRE 2019).

The California Strategic Fire Plan outlines 21 Operational Units, which geographically follow county lines and consist of one to three counties. As each Operational Unit varies greatly in size, terrain, and fire suppression strategies, individual Unit Strategic Fire Plans are completed annually to address how each Unit is achieving the goals and objectives of the California Strategic Fire Plan.

Fresno-Kings Unit Strategic Fire Plan

The Project site is located within the Fresno-Kings Operational Unit and would follow goals and objectives outlined within the Fresno-Kings Unit Strategic Fire Plan. The Fresno-Kings Unit Strategic Fire Plan (Unit's Fire Plan) was completed by a collaborative effort with various stakeholders in the Unit, program managers, bureau managers, and Battalion Chiefs. The Unit's Fire Plan is updated each year based upon the accomplishments, goals, and objectives outlined by the Unit and the California Strategic Fire Plan. The Unit's Fire Plan is executed by a continued working relationship with CAL FIRE and the Fresno County Fire Protection District (FCFPD) and is divided into battalions. The Project site is located within the jurisdictional area of Battalion 15,

which predominantly covers the central and western area of the FCFPD in the Fresno Kings Unit (CAL FIRE 2020). Battalion 15 consists of 730,970 acres of Local Responsibility Area (LRA).

California Emergency Response Plan

Pursuant to the Emergency Services Act (Gov't Code §8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, State, and local governmental agencies and private persons. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES). The OES coordinates the responses of other agencies, including the United States Environmental Protection Agency (USEPA), California Highway Patrol (CHP), California Department of Fish and Wildlife (CDFW), the nine RWQCBs (including, as relevant to this Project, the Central Valley RWQCB), the local air districts (including the San Joaquin Valley Air Pollution Control District) and local agencies. The State Emergency Plan defines the "policies, concepts, and general protocols" for the proper implementation of the California Standardized Emergency Management System (SEMS). The SEMS is an emergency management protocol that agencies within the State of California must follow during multi-agency response efforts whenever state agencies are involved.

California Public Resources Code

The Public Resources Code includes fire safety regulations that apply to State Responsibility Areas (SRAs) during the time of year designated as having hazardous fire conditions, i.e., "fire season." In Fresno County for 2021, fire season has been identified as beginning on May 31st (CAL FIRE 2021). During the fire hazard season, these regulations restrict the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

Public Resources Code Section 4291 provides that a person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining brush- or grass-covered lands or land that is covered with flammable material shall at all times maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line.

Public Resources Code Sections 4292 and 4293 require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line shall maintain a firebreak clearing around and adjacent to any pole, tower, and conductor that carries electric current as specified in the section.

California Strategic Fire Plan

The 2018 Strategic Fire Plan for California (Fire Plan) is the most recent statewide plan for the adaptive management of wildfire (CAL FIRE 2018). The central goals that are critical to reducing and preventing the impacts of fire revolve around both suppression efforts, natural resource management, and fire prevention efforts. The key goals of the Fire Plan include the following:

1. Improve the availability and use of consistent, shared information on hazard and risk assessment;

2. Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities;
3. Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans (CWPP);
4. Increase awareness and actions to improve fire resistance of man-made assets at risk and fire resilience of wildland environments through natural resource management;
5. Integrate implementation of fire and vegetative fuel management practices consistent with the priorities of landowners or managers;
6. Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services; and
7. Implement needed assessments and actions for post-fire protection and recovery.

The Fire Plan does not contain any specific requirements or regulations. Rather, it acts as an assessment of current fire management practices and standards and makes recommendations on how best to improve the practices and standards in place (CAL FIRE 2018).

Fire Protection in California Fire Code and Public Resources Code

The California Fire Code is contained within Title 24, Chapter 9 of the California Code of Regulations. Based on the International Fire Code, the California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the California Fire Code and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to incorporate to protect life and property. Section 1207 of the California Fire Code outlines provisions for applicable stationary and mobile energy storage systems, including threshold quantities.

The California Public Resources Code includes fire safety provisions that apply to either mountainous, forest, brush, and/or grass covered lands that are deemed necessary by the director or agency with primary responsibility for fire protection in the area. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas. Additional codes provided in Sections 4294 to 4296 require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such areas, establish and maintain a firebreak clearing around and adjacent to any pole, tower, and conductors that carry electric current as specified in Public Resources Code Sections 4292 and 4293. Section 4292 requires that PG&E maintain a 10-foot firebreak clearance around the base of a utility pole, with tree limbs within the 10-foot radius of the pole being removed up to 8-feet above ground. The State's Fire Prevention Standards for Electric Utilities (14 Cal. Code Regs. §§1250-1258) provide

specific exemptions from electric pole and tower firebreak and electric conductor clearance standards and specifies when and where standards apply.

California Public Utilities Commission General Orders

General Order 95

CPUC General Order 95 applies to work conducted by PG&E and other Investor-Owned Utilities (IOUs),[1] including the construction and reconstruction of overhead electric lines. The replacement of poles, towers, or other structures is considered reconstruction and requires adherence to all strength and clearance requirements of this order. CPUC Decision 17-12-024 created enhanced requirements under Rule 18A, Rule 35, and Rule 38, which apply to overhead electric lines located in Tier 2 or Tier 3 High Fire Threat Districts (HFTDs). The Project is not proposed in a Tier 2 or Tier 3 HFTD; therefore, the enhanced requirements would not apply to the PG&E infrastructure and improvements that would be needed to connect the Project to the grid.

The CPUC has promulgated various rules to implement the fire safety requirements of General Order 95, including:

- Rule 18A, which requires utility companies take appropriate corrective action to remedy Safety Hazards and General Order 95 nonconformances. Additionally, this rule requires that each utility company establish an auditable maintenance program.
- Rule 31.2, which requires that lines be inspected frequently and thoroughly.
- Rule 35, which requires that vegetation management activities be performed in order to establish necessary and reasonable clearances. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order.
- Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires (CPUC 2018a).

General Order 165

General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform "Patrol" inspections, which are defined as a simple visual inspection of utility equipment and structures (which inspection is designed to identify obvious structural problems and hazards) 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. By July 1 of each year, each utility subject to this General Order must submit an annual report of its inspections for the previous year under penalty of perjury (CPUC 2017b).

General Order 166

General Order 166 Standard 1.E requires IOUs to develop a fire prevention plan, which describes measures that the utility will implement to mitigate the threat of power line fires generally.

[1] Investor-owned utilities (IOUs) are private electricity and natural gas providers. The CPUC regulates IOUs.

Additionally, this standard requires that IOUs outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning[2] event in a high fire threat area. Fire prevention plans formulated by IOUs are required to identify specific parts of the utility's service territory where the conditions described above (i.e., Red Flag Warnings and high wind events) may occur simultaneously. Standard 11 requires that utilities report annually to the CPUC regarding compliance with General Order 166 (CPUC 2017c). In compliance with Standard 1.E of this General Order, PG&E adopted a fire prevention plan on September 30, 2017 (CPUC 2018b).

PG&E Company Emergency Response Plan

Standard 1 also requires that utilities prepare an emergency response plan. PG&E's Emergency Response Plan, prepared in compliance with Standard 1 describes and formalizes PG&E's in-place plans and protocols for responding to emergencies. The plan identifies potential hazards, available resources to respond to emergencies, internal communication protocols, and operational structure. Additionally, PG&E's Wildfire Safety Operations Center operates 24-hours a day during wildfire season (PG&E 2018).

Senate Bill 1028

Senate Bill 1028 (2016) requires each electrical corporation to construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment, and makes a violation of these provisions by an electrical corporation a crime under state law. The bill also requires each electrical corporation to annually prepare a wildfire mitigation plan and submit it to the CPUC for review. The plan must include a statement of objectives, a description of preventive strategies and programs that are focused on minimizing risk associated with electric facilities, and a description of the metrics that the electric corporation uses to evaluate the overall wildfire mitigation plan performance and assumptions that underlie the use of the metrics. PG&E developed the 2017 Fire Prevention Plan in response to the requirements of SB 1028.

Senate Bill 901

Senate Bill 901 (2018) expanded upon the wildfire mitigation plan requirements of Senate Bill 1028 and included a number of provisions related to wildfire risk and management in California including, but not limited to, the following: budget adjustments related to emergency response and readiness, the creation of a CAL FIRE Wildfire Resilience Program and increasing the maximum penalties that can be issued by the CPUC to a public utility that fails to comply with CPUC requirements. Additionally, the legislation requires that utilities prepare wildfire mitigation plans that include elements specified in the bill such as the following: 1) a description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks; 2) protocols for disabling reclosers[3] and de-energizing portions of the

[2] A "Red Flag Warning" is issued by the National Weather Service to alert fire departments of the onset, or possible onset, of critical weather and dry conditions that could lead to rapid or dramatic increases in wildfire activity.

[3] Reclosing devices, such as circuit breakers, are used to isolate circuit segments when abnormal system conditions are detected.

electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure; and 3) particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory. These wildfire mitigation plans are required to be reviewed by an independent evaluator.

PG&E Wildfire Mitigation Plan

On February 5, 2021, PG&E submitted its 2021 Wildfire Mitigation Plan (WMP) in compliance with California SB 901, AB 1054, and direction from the CPUC Wildfire Safety Division. The 2021 WMP provides updated details on PG&E's comprehensive Community Wildfire Safety Program, incorporates lessons learned from the 2020 wildfire season, and outlines the additional programs planned to continue to reduce the risk of catastrophic wildfires. PG&E's updated WMP has three overarching goals: 1) reducing wildfire ignition risk, 2) enhancing wildfire risk situational awareness, and 3) reducing the impact of Public Safety Power Shutoff (PSPS) events. The updated 2021 WMP benefits from both historical data (weather patterns, detailed information on previous ignitions, outages and other risk events, etc.) as well as state-of-the-art tools such as fire-spread technology that shows the locations where specific infrastructure failures can lead to ignitions that have the highest consequences for specific communities. Wildfire mitigation workstreams, system hardening, and enhanced vegetation management will be a main focus for the updated 2021 WMP in higher risk circuit segments and in fire rebuild areas (PG&E 2021).

Local

Fresno County 2000 General Plan

The Fresno County General Plan (General Plan) is a comprehensive, long-term framework for the protection of the County's agricultural, natural, and cultural resources and for development in the County. The Health and Safety Element of the General Plan establishes policies and programs to protect the community from risk associated with emergency management and response, as well as fire hazards. The Fire Hazards section within the Health and Safety Element is designed to ensure that new development is constructed to minimize potential fire hazards, minimize the risk of fire in already developed areas, and to provide public education concerning fire prevention (Fresno County 2000). Goals and policies applicable to the Project are provided below.

> **Goal HS-B:** To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.
>
> > ***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. All major subdivisions shall have a minimum of two (2) points of ingress and egress.
> >
> > ***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.

Fresno County Multi-Hazard Mitigation Plan

The purpose of the Fresno County Multi-Hazard Mitigation Plan is to reduce or eliminate any long-term risk to people and property from hazards such as floods, wildfires, severe weather, drought, and agricultural hazards which could have a significant impact on the County. Fresno County and the other participating jurisdictions developed this multi-hazard mitigation plan to make the County and its residents less vulnerable to future hazard events, such as wildfire (Fresno County 2018).

Fresno County Operational Area Master Emergency Services Plan

In 1995, the Fresno County Board of Supervisors adopted California's Standardized Emergency Management System, established the geographic area of the County of Fresno as the Fresno County Operational Area, and designated Fresno County as the Operational Area Lead Agency (Fresno County 2017). The Fresno County Office of Emergency Services (OES) coordinates the development and maintenance of the Fresno County Operational Area Master Emergency Services Plan (Fresno County OAMESP 2017). The OES prepared the Fresno County OAMESP to serve as a guide for response to an emergency/disaster in the unincorporated areas of the Fresno County Operational Area, and to coordinate and assist with the disaster response in jurisdictions both within and outside of the Fresno County Operational Area.

4.20.2 Significance Criteria

The Project, if located in or near a state responsibility area or (on) lands classified as very high fire severity zones, would result in significant impacts to wildfire if it would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan;

b) 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;

c) 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;

d) 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.

4.20.3 Direct and Indirect Effects

4.20.3.1 Methodology

As discussed above in Section 4.20.1.2, the Project is not located within a SRA and is not classified as a Very High Fire Hazard Severity Zone (VHFHSZ). According to CAL FIRE's fire hazard severity zone mapping, the Project site is entirely located within a LRA, which means the

FCFPD is responsible for fire protection services for the Project and the majority of lands within the Battalion 15 outlined by the Fresno-Kings Unit Strategic Fire Plan. The closest SRA designated as a High Fire Hazard Severity Zone is located over approximately 17 miles west of the Project site in the foothills and moderately high mountain ranges. Although the Project site is not located directly within a SRA or designated as a VHFHSZ, the analysis provided below considers all other environmental factors and conditions that could contribute to a wildfire risk or source of ignition.

This impact analysis focuses on potential effects associated with the Project and alternatives related to wildfire. This analysis was based on a review of the Fresno County Multi-Jurisdictional Hazard Mitigation Plan, Fresno-Kings Unit Strategic Fire Plan, CAL FIRE Strategic Plan, and additional applicable regulations and guidelines.

4.20.3.2 Direct and Indirect Effects of the Project

As analyzed below, the Project would result in a less-than-significant impact with respect to criteria b), c), and d) and no impact with respect to criterion a). Alone and as a subset of overall Project elements, impact conclusions for the PG&E infrastructure would be the same as for the Project as a whole.

Criterion a) Whether the Project would substantially impair an adopted emergency response plan or emergency evacuation plan.

The Fresno County Operational Area Master Emergency Service Plan coordinated by the Fresno County Office of Emergency Services outlines a general structure for emergency responders in the event of an emergency in the County and does not establish any specific evacuation routes or plans, standards, goals, or policies. The Project would not impair implementation of that plan because it would not alter or impair any of the existing road networks; its construction would not require any closure of public roads that could inhibit access by emergency vehicles; and its operation and maintenance would require relatively low staffing, resulting in minimal additional traffic on area roadways. As described in Section 4.20.1.3, *Regulatory Setting*, the 2019 Strategic Fire Plan for California outlines overarching goals for CAL FIRE. Because the plan is not directly applicable to the Project, the Project would not conflict with or impair the implementation of the 2019 Strategic Fire Plan for California. No other plans designate any emergency ingress or egress evacuation routes near the Project. Therefore, the Project would have no impact on adopted emergency response and evacuation plans during the construction, operation and maintenance, or decommissioning phases.

As described in detail in Section 4.18, *Transportation* (Impact 4.18-4), multiple access roads allow ingress and egress to the Project site, allowing sufficient and code-compliant emergency access to the site itself.

The Project's construction, operation, and decommissioning phases would not conflict with any adopted emergency response or evacuation plans, and would have no impact. **(*No Impact*)**

Criterion b) Whether the Project would, 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.

Impact 4.20-2: The Project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants (i.e., temporary or permanent workers) to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. (*Less than Significant*)

The Project structures are not intended for and would not be used for occupation and therefore would not expose occupants to increased risk associated with wildfire. The Project could, however, incrementally exacerbate existing wildfire risks that could affect Project workers if they are present onsite.

The Project site is sparsely vegetated in a largely agricultural region with flat topography and no forested areas in the vicinity. The Project site is not populated, but occasionally is tended by workers consistent with its current use for dry-farmed agricultural purposes. Existing activities may include very occasional disking or other vehicle use within the Project boundary. According to CAL FIRE, CPUC, and Fresno County, the Project site is not identified as an area of high fire risk (CAL FIRE 2007; CPUC 2017; Fresno County 2018).

Construction of the Project would consist of site preparation (e.g., grading, excavation) and above-ground facility construction, such as for the O&M building, substation structures, and electrical interconnections. The use of vehicles and equipment during construction could ignite dry vegetation and result in a fire, particularly during the drier, warmer conditions of summer and fall. Activities that could result in sparks such as welding or grading have a greater potential to result in an ignition. Therefore, depending on the time of year and the location of construction activities, construction activities could increase the sources of potential ignition and temporarily exacerbate the risk of wildfire. If construction were to result in an ignition, wildfire could result in smoke and air pollutants that could result in poor air quality for the surrounding communities.

As described above, the Project site is not considered to be an area of high fire risk due to the flat topography and lack of significant fuels. Additionally, there is no history of fires near the Project site. Removal of vegetation and preparation of the site prior to construction activities would remove existing vegetation and reduce potential fuel sources that could contribute to a wildfire risk. Therefore, while the use of equipment onsite during Project construction could temporarily increase the risk of an ignition, the risk of an ignition resulting in the uncontrolled spread of wildfire would be low. Due to the lack of fuels onsite, the flat topography of the Project site, and the short duration of construction, the risk of Project construction leading to an ignition and the spread of wildfire would be less than significant.

During the operation and maintenance phase, the Project would employ 7 permanent on-site staff who would be present during normal business hours (i.e., 9am – 5pm) to operate, maintain, and/or monitor the site. Once operational, the Project would include the addition of potential ignition sources such as a battery energy storage system, vehicles and equipment required to operate and

maintain the Project. These components could contribute to an increase in wildfire risk. The Project would include a lithium ion or a flow battery energy storage system (ESS) that would either be AC-coupled or DC-coupled and would be physically arranged in temperature-controlled enclosures (e.g., structure, container boxes, or trailers). Flow battery systems have a lower fire risk (compared to lithium ion batteries) due to the non-flammable materials and design mechanisms that trigger shut down when operating parameters deviate from safe conditions (Energy Response Solutions 2017). Construction of the Project's battery storage system would occur in a manner consistent with the California Building Code standards and design specifications, pursuant to Section 1206 of the California Fire Code pertaining to electric energy storage systems and safety standards. The proposed energy storage system would be designed, constructed, operated, and maintained in accordance with existing federal, state, and local regulations for health and safety, including Section 1206 of the 2019 California Fire Code, which contains requirements for electrical energy storage systems. Compliance with these independently enforceable regulatory requirements would reduce potential fire risk associated with the ESS to a less than significant level. The reduced number of vehicles present on the Project site during the operation and maintenance phase and the types of operation and maintenance activities that would be conducted (e.g., panel washing, inspections, and occasion equipment repairs) would result in a less than significant impact. Further, the Project would include meteorological data collection systems to track weather conditions, including solar irradiance, air temperature, air pressure, and wind speed and direction, which would allow for monitoring during the operation phase. Given the relatively flat site-topography and surrounding lack of vegetation that could operate as fuel for a fire, Project operation and maintenance would not significantly exacerbate existing wildfire risks. The potential impacts related to wildfires during the operation and maintenance phase would be less than significant.

Similar to construction, the Project's decommissioning and site reclamation process would include the use of heavy equipment required to dismantle the solar modules and remove structures from the site. Decommissioning would proceed in a planned manner as described in the Reclamation Plan prepared for the Project (Appendix B-1, *Reclamation Plan*). Such activities could present a slight increased risk for wildfire. However, given the site conditions, notably the flat topography and lack of vegetation on the site, the Project would not exacerbate wildfire risk. Impacts, similar to those described for the construction phase, would be less than significant.

Criterion c) Whether the Project would 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 result in temporary or ongoing impacts to the environment.

Impact 4.20-3: The Project would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. (*Less than Significant*)

The Project would include the installation and/or maintenance of road improvements, power lines, and other utility infrastructure, such as the proposed ESS, as well as potential installation of a groundwater well. The installation or maintenance of these improvements could exacerbate fire risk. However, consistent with Fresno County Guidelines for Solar, a buffer would be established

between the Project site and the surrounding roads and residences (see Appendix L-2 for details about the Project's consistency with solar guidelines more generally). Further, as described in Chapter 2, *Project Description*, a water supply well could be constructed, which could presumably be used in an emergency for fire suppression purposes.

The Project would include access road improvements to improve ingress and egress during construction, operation, and decommissioning. The environmental impacts of these improvements are analyzed throughout this document on a resource-by-resource basis. No additional road improvements would be required. Access road improvements are intended to improve access and maintenance during construction, operation, and decommissioning of the Project resulting in improved ingress and egress. The use of aggregate and native materials along an existing access road would not significantly exacerbate the fire risk.

As discussed above, the construction, operation, and maintenance of the battery ESS and associated electrical equipment would not exacerbate fire risk due to the existing low fire risk conditions, lack of fuel, temperature surveillance, and regulatory safety guidelines. Installation and maintenance of the associated electrical facilities would not exacerbate fire risk and the impact would be less than significant.

Additional impacts associated with PG&E infrastructure and the gen-tie connection are discussed below.

Criterion d) Whether the Project would 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.

Impact 4.20-4: The Project 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. (*Less than Significant*)

As discussed above, the Project would have a low potential to exacerbate wildfire risk due to lack of substantial fuel, flat terrain, and distance between the Project site and population centers. Additionally, as discussed in Section 4.11, *Hydrology and Water Quality* and Section 4.8*, Geology*, *Soils, and Paleontological Resources*, the Project is not located within a flood zone and would introduce a minimal amount of new impervious surfaces and be designed such that site drainage generally would follow pre-Project drainage patterns.

As noted in Section 2.8, the Project would implement best management practices (BMPs) to limit runoff and control erosion during construction, as required, and in compliance with the terms stipulated by the stormwater pollution prevention plan (SWPPP) and associated conditions of the Construction General Permit or, in the absence of a nexus with waters of the United States, a plan that incorporates substantively similar stormwater BMPs to reduce the adverse effects of erosion and sedimentation. Similarly, if site preparation and construction activities implicate waters of the United States, those activities would be performed in accordance with a SWPPP; if waters of the United States are not implicated, these activities would be performed in accordance with a

substantively similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation. These BMPs would limit erosion, siltation, and runoff from leaving the Project site and entering surrounding waterways that could contribute to flooding or landslides. Therefore, the Project would not contribute significantly to any downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. This impact would be less than significant.

PG&E Infrastructure

As described in Section 2.5.3, PG&E infrastructure and improvements needed to connect the Project to the grid would involve an extension to an existing 230 kV gen-tie line by up to 0.2 mile to connect with the Project's proposed substation. New conductor would be hung on new or existing tubular steel poles, each up to 140 feet high. The Project also would include expansions of the existing Tranquillity Switching Station by approximately 200 feet to the north, increasing the size of the switching station by approximately 3 acres. This expansion would preserve a buffer area of approximately 100 feet from the existing solar array to the north. As with other Project components, the PG&E infrastructure would not be located in a SRA nor in a VHFHSZ. The addition of the power line and poles could result in an increased fire risk associated with construction of the new infrastructure as well as the potential for associated transmission line failures resulting in sparks such as downed lines, bird strikes, vegetation contact, arc flashes, and equipment failure. Therefore, the PG&E interconnection facilities could increase the risk of wildfire due to the increased risk of ignition during construction and operation of the Project.

Given the inherent potential for ignition risk associated with power lines, it is anticipated that PG&E's Fire Prevention Plan would be applied to the PG&E interconnection facilities, as required by CPUC GO 166. The implementation of operational risk management programs identified in PG&E's Fire Prevention Plan and Wildfire Safety Plan would reduce the risk of an ignition during operation. Relevant programs include enhanced weather monitoring, the Wood Pole Test and Treat Program, Pro-Active Responses to Fire Incidents, enhancements to PG&E's Storm Outage Prediction Model, the Wildfire Reclosing Disable Program, and the implementation of the PSPS program (PG&E 2018). Additionally, vegetation along the 230 kV PG&E line would be managed in compliance with NERC Standard FAC-003, Transmission Vegetation Management. The Project also would be subject to the CPUC vegetation management and clearance requirements (GO 95, GO 165, and GO 166). Compliance with the associated operational and vegetation clearance requirements would effectively manage the risk of exposing surrounding communities to exacerbated risk of the uncontrolled spread of a wildfire during construction and operation or maintenance of the PG&E infrastructure. With compliance with existing regulations, impacts to wildland fire associated with the PG&E infrastructure would be less than significant for purposes of CEQA. The combined impacts of the Project and PG&E infrastructure would be less-than-significant.

4.20.3.3 Direct and Indirect Effects of Alternatives

Alternative 1

Compared to the Project, Alternative 1 would construct, operate, maintain, and decommission a solar facility upon a smaller (20-percent reduced) footprint upon the same site location as proposed for the Project. All other infrastructure and improvements proposed as part of the Project would continue to be required under Alternative 1. The disturbance area would be reduced by approximately 400 acres and the remaining on-site acreage would remain vacant. Because a smaller project could require less equipment use or a shorter construction period, there is potential for it to reduce effects associated with wildfire risk. However, although the scale of site disturbance and construction would be reduced, the impact conclusions are the same for Alternative 1 as identified in Section 4.20.3.

No Project Alternative

If the No Project Alternative is implemented, there would be no construction, operation, maintenance, or decommissioning of the proposed solar, battery storage, or related facilities. No ignition sources or human presence would occur on-site in connection with a solar energy facility or battery energy storage system, on-site roadways would not be improved, no power lines would be extended to the site, and no structures would be built, operated, maintained, or removed during decommissioning. Instead, the site would continue to be either dry farmed (non-irrigated) for grain cultivation or left fallow. Because there would be no change relative to baseline conditions, the No Project Alternative would generate no impact related to Wildfire.

4.20.4 Cumulative Analysis

As discussed above, there would be no impact with respect to the potential for the Project to impair an emergency response plan. Therefore, neither the Project nor an alternative would cause or contribute to any cumulative impact to emergency response or evacuation. Additionally, due to the location in the valley floor and site conditions with flat terrain, neither the Project, nor an alternative would contribute to a potentially significant cumulative impact associated with downslope or downstream flooding. The potential for the Project or an alternative to cause or contribute to a potential significant cumulative impact with respect to the remaining wildfire considerations is evaluated below.

The geographic scope for potential cumulative impacts to wildfire encompasses the Project site and the surrounding areas, which consist primarily of agricultural land uses and operating solar projects. Ongoing impacts relating to wildfire considerations of past projects are reflected in the environmental setting described in Section 4.20.1.2 and specifically include the potential for the nearby solar projects and agricultural land uses to result in an ignition due to a mechanical failure or maintenance activities. Environmental conditions in the geographic scope for cumulative effects are not conducive to the rapid spread of uncontrolled wildfire due to the flat topography and lack of vegetative fuel loads. Additionally, as identified in Section 4.20.1, there have been few to no historic fires in the Project vicinity. Whereas existing land uses could provide ignition

sources, operating solar projects and agricultural uses do not present a significant risk with respect to ignition sources.

In combination with other projects in the vicinity, the Project could incrementally increase the potential for ignition sources in the area. However, given the flat topography and lack of vegetation within the geographic scope of cumulative impacts, the impact of an increase in ignition sources of the Project in combination with the incremental impacts of other projects (e.g., the Scarlet and Luna Valley solar projects) would be less than significant.

As described under Impact 4.20.3, some of the infrastructure proposed as part of the Project such as the power lines and the ESS could exacerbate fire risk. However, these types of components are subject to regulations (such as the CBC and CPUC fire safety regulations) that contain controls established to reduce fire risks. Moreover, as discussed, these infrastructure elements would not be located in a SRA nor in a VHFHSZ. As with the Project, other cumulative projects would also be subject to the same (or similar) regulatory controls which would reduce the cumulative risks associated with such infrastructure.

It is worth noting that other components of the Project could reduce fire risk. Consistent with Fresno County Guidelines for Solar, buffers would be established around the site (see Appendix I-1, *Land Use Consistenc*y). Moreover, a well could be established, which could provide a source of water in the event of a fire. Other solar projects in the cumulative scenario would also be required to conform to Fresno County Guidelines such that site buffers and other measures to reduce risks would be required. Therefore, potential impacts would not be cumulatively considerable. There is no existing significant cumulative impact, and the Project's incremental, less-than-significant contributions when combined with the incremental impacts of other projects in the cumulative scenario would not cause one. Cumulative impacts would be less than significant.

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CHAPTER 5
Comparison of Project and Alternatives

5.1 Introduction to Environmental Analysis

Thi1s section compares the environmental advantages and disadvantages of the Project and alternatives evaluated in detail in this Draft EIR. This comparison is based on the analysis of environmental impacts of the Project provided in Sections 4.2 through 4.20 and the descriptions of the Project and alternatives provided in Chapter 3, *Alternatives*. This comparison is designed to satisfy the requirements of CEQA Guidelines §15126.6(d), which states:

> *The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.*

5.2 Comparison Methodology

The following methodology was used to compare alternatives in this Draft EIR:

Step 1: Identification of Alternatives. The alternatives development and screening process described in Chapter 3 was used to identify potential alternatives to the Project. Among the many potential alternatives initially considered, the Reduced Acreage Alternative and the No Project Alternative were carried forward for detailed environmental review. No other reasonable feasible alternatives meeting most of the basic Project Objectives were identified that would substantially reduce or eliminate the anticipated significant environmental effects of the Project.

Step 2: Determination of Environmental Impacts. Potential environmental impacts of the Project and each of the alternatives were identified and analyzed in detail in Chapter 4, including potential direct, indirect, and cumulative impacts related to construction, operation and maintenance, and decommissioning.

Step 3: Comparison of Project with Alternatives. Environmental impacts of the Project were compared to those of the Reduced Acreage Alternative and the No Project Alternative to make a preliminary determination of the Environmentally Superior Alternative.

5.3 Comparison of Alternatives

In addition to the No Project Alternative, Alternative 1, the Reduced Acreage Alternative was identified for detailed evaluation in this Draft EIR. The potential environmental impacts of Alternative 1 and the No Project Alternative are analyzed in comparison to the Project in each of the resource areas in Chapter 4. As analyzed and documented in Chapter 4, all Project impacts would be less than significant or less than significant with mitigation incorporated. The Reduced Acreage Alternative would not cause or contribute to a significant and unavoidable impact to any environmental resource. All impacts of Alternative 1 would be less than significant or less than significant with mitigation incorporated, similar to the Project. The No Project Alternative would cause none of the impacts that could result from the Project.

The results of the comparative analysis of each of the resource areas analyzed in Chapter 4 are set forth in **Table 5-1**, which compares the conclusions of the impact analysis for the Reduced Acreage Alternative against the conclusions for the Project.

CEQA Guidelines §15126.6(e)(2) requires an EIR to identify an environmentally superior alternative. If the environmentally superior alternative is the No Project Alternative, then the EIR also must identify an environmentally superior alternative from among the other alternatives. In general, the environmentally superior alternative is defined as that alternative with the least adverse impacts to the Project area and its surrounding environment. CEQA Guidelines Section 15126.6(a) places emphasis on alternatives that "avoid or substantially lessen the significant effects" of a project; distinctions between impacts that are less than significant or are mitigated to less than significant are typically not considered when selecting an environmentally superior alternative.

The No Project Alternative would avoid all impacts of the Project and would not create any new significant impacts of its own. However, as noted in Section 4.9, *Greenhouse Gas Emissions*, the No Project Alternative would not result in the GHG emissions reductions benefits that would result from the Project. The No Project Alternative also would fail to meet any of the basic Project Objectives, including assisting California utilities in meeting their obligations under California's RPS Program, as discussed in Section 4.7, *Energy*.

5.4 Environmentally Superior Alternative

The CEQA Guidelines define the environmentally superior alternative as that alternative with the least adverse impacts to the project area and its surrounding environment; therefore, the No Project Alternative is considered the environmentally superior alternative for CEQA purposes because it would not create any of the localized impacts of the Project, even though it would have a less beneficial impact than that of the Project on energy and GHG emissions. The No Project Alternative would fail to meet the basic objectives of the Project, including, but not limited to, fulfilling the Applicant's executed large generator interconnection agreement for 200 MW solar PV, providing an energy storage system with 184 MWAC battery storage capacity, supporting California and Fresno County goals of protecting farmland and conserving groundwater through appropriate siting of the Project upon lands under a "non-irrigation" covenant, increasing local short-term and long-term employment opportunities and provide economic benefits to Fresno County, and

TABLE 5-1
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Resource Area	Project	Reduced Acreage Alternative	No Project Alternative
Aesthetics	Impacts determined to be Less than Significant.	Impacts would be similar, also less than significant, but reduced compared to the Project. **Less than the Project**	No impacts. **Less than the Project**
Agriculture and Forestry Resources	Impacts determined to be Less than Significant.	Impacts would be the same as for the Project. Less than Significant. **Equivalent to the Project**	No Impacts. **Less than the Project**
Air Quality	Impacts determined to be Less than Significant.	Impacts would be similar in type but reduced in scale compared to the Project. Less than Significant. **Less than the Project**	No impacts. **Less than the Project**
Biological Resources	Impacts determined to be Less than Significant with Mitigation Incorporated.	Potentially reduced impacts to Swainson's hawk nesting and foraging habitat. Other impacts would be similar in type but reduced in scale compared to the Project. Less than Significant. **Less than the Project**	No Impacts. **Less than the Project**
Cultural and Tribal Resources	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar but reduced compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. **Less than the Project**	No impacts **Less than the Project**
Energy	Impacts determined to be Less than Significant; beneficial contribution resulting from generation of renewable energy.	Impacts (including beneficial contribution to energy supply) would be similar to the Project but reduced in scale. Less than Significant. **Equivalent to the Project**	No adverse or beneficial impact.
Geology, Soils, and Paleontological Resources	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No Impacts. **Less than the Project**
Greenhouse Gas Emissions	Impacts determined to be Less than Significant; overall beneficial impact from net GHG reduction.	Impacts would be the same as the Project, Reduced Acreage Alternative would involve reduced GHG emissions during construction compared to the Project, but would result in a reduction in renewable power generation once operational. The operational beneficial impact from net GHG reduction would be reduced in comparison to the Project. Less than Significant. **Equivalent to the Project**	No adverse or beneficial impact.
Hazards and Hazardous Materials	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant with Mitigation. **Less than the Project**	No impacts **Less than the Project**

TABLE 5-1 (CONTINUED)
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Resource Area	Project	Reduced Acreage Alternative	No Project Alternative
Hydrology and Water Quality	Impacts determined to be Less than Significant.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No Impacts. **Less than the Project**
Land Use and Planning	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Mineral Resources	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Noise	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No impacts. **Less than the Project**
Population and Housing	Impacts determined to be Less than Significant.	Impacts would be the same as for the Project. Less than Significant. **Equivalent to the Project**	No Impacts. **Less than the Project**
Public Services	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Recreation	No Impacts.	No Impacts. **Equivalent to the Project**	No Impacts. **Equivalent to the Project**
Transportation	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar in type but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant with Mitigation. **Less than the Project**	No Impacts. **Less than the Project**
Utilities and Service Systems	Impacts determined to be Less than Significant with Mitigation Incorporated.	Impacts would be similar but reduced compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant with Mitigation. **Less than the Project**	No impacts. **Less than the Project**
Wildfire	Impacts determined to be Less than Significant.	Impacts would be similar but reduced in scale compared to the Project; this would not affect significance determinations, which would remain the same as for the Project. Less than Significant. **Less than the Project**	No impacts. **Less than the Project**

supporting the generation of renewable energy in the State of California per the objectives outlined in SB 100. Since the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives, which can be called the environmentally superior action alternative.

Determining an environmentally superior action alternative can be difficult because of the many factors that must be balanced. The Reduced Acreage Alternative could be preferred because, relative to the Project it would have fewer adverse environmental effects. In contrast, the Project could be preferred because, relative to the Reduced Acreage Alternative, it would generate the greatest amount of renewable energy and battery energy storage capacity, and so would offset the most metric tons of carbon dioxide emissions generated by fossil fuels and provide greater assistance to the State toward meeting the renewable energy generation targets set in SB 100.

The County preliminarily has identified the Project as the environmentally superior action alternative because of the beneficial effects associated with the greater amount of renewable energy it would produce compared to the other alternatives, and because it can do so while mitigating all adverse effects to a less than significant level such that the Reduced Acreage Alternative would neither avoid nor "substantially lessen" the Project's impacts once mitigation is accounted for. Nonetheless, County decision-makers may weigh the relative benefits of the alternatives differently and, with additional information received or developed during the project approval process, reasonably could reach a different decision.

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CHAPTER 6
Report Preparation

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Brian Pittman, M.S., CWB	Biological Resources
Heidi Koenig, RPA	Cultural and Tribal Cultural Resources
Karen Lancelle, MLIS	Geology, Soils, Paleontology, Hydrology and Water Quality, Wildfire
Selena Whitney, AICP	Quality Assurance/Quality Control

6.3 Entities Consulted and Recipients of the Draft EIR

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Department of Public Works and Planning

Fresno Council of Governments

Fresno County Fire Protection District

Fresno Metropolitan Flood Control District

EDP Renewables Inc.

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Federal Agencies

United States Army Corps of Engineers

United States Department of Agriculture, Natural Resources Conservation Service

United States Department of the Interior, Fish and Wildlife Services, Endangered Species Division

United States Environmental Protection Agency, Region 9

United States Fish and Wildlife Service, San Joaquin Valley Division

State Agencies

California Department of Conservation

California Department of Fish and Wildlife

California Department of Forestry and Fire Protection Fresno-Kings Unit

California Department of Transportation (Caltrans District 6)

California Energy Commission

California Environmental Protection Agency Department of Toxic Substances Control

California Highway Patrol

California Native American Heritage Commission

California Public Utilities Commission

California Reclamation Board

California Regional Water Quality Control Board, Region 5

California State Clearinghouse

California State Office of Historic Preservation, Department of Parks and Recreation

Native American Tribes

Dumna Wo Wah

Dumna Wo Wah Government

Picayune Rancheria of the Chukchansi Indians

Santa Rosa Rancharia Thachi Yokut Tribe

Local Agencies

Central Valley Flood Protection Board

City of Kerman Planning Department

City of Mendota, Planning and Community Development

Tranquillity Irrigation District

Westlands Water District

Kings Basin Water Authority

Mendota Unified School District

James Irrigation District

Golden Plains Unified School District

Kings River Conservation District

NAVFACSW Intergovernmental Branch

Tranquillity Resource Conservation District

Westside Resources Conservation District

Other Interested Parties

Adams Broadwell Joseph & Cardozo

Laborers Intl Union of N. America, Local Union 294

Lozeau Drury, LLP

Owners of real property located within 1-mile of the Project site

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