CORNUCOPIA HYBRID PROJECT

Draft Environmental Impact Report
EIR No. 8511
CUP No. 3777
Variance No. 4184

Prepared for
County of Fresno
Department of Public Works and Planning
Development Services and Capital Projects Division

January 2026

ESA



Cover photo: Cornucopia Hybrid, LLC, 2024

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Draft Environmental Impact Report

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Acronyms and Other Abbreviations

Abbreviation	Definition
AAQA	ambient air quality analysis
AB	Assembly Bill
AC	alternating current
ACF	Advanced Clean Fleets
ADT	average daily traffic
AE	Exclusive Agricultural zoning district
AF	acre-feet
APM	Applicant-proposed measure
APN	assessor's parcel number
Applicant	Cornucopia Hybrid, LLC
AQ and GHG Technical Report	*Cornucopia Hybrid Project: Air Quality and Greenhouse Gas Technical Report*
Avenal Landfill	Avenal Regional Landfill
Basin Plan	*Water Quality Control Plan for the Tulare Lake Basin*
battery ESS	battery energy storage system
BMP	best management practice
Btu	British thermal units
C&D	Construction and Demolition
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
Cal. Code Regs.	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife

Abbreviation	Definition
CDPR	California Department of Pesticide Regulation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERP	Company Emergency Response Plan
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CHUSD	Coalinga-Huron Unified School District
CMP	Congestion Management Process
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Construction General Permit	General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities
County	Fresno County government
CPUC	California Public Utilities Commission
CUP	conditional use permit
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
DC	direct current
DPM	diesel particulate matter
Draft EIR	draft environmental impact report
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EFZ	Earthquake Fault Zone
EIA	U.S. Energy Information Administration
EIR	environmental impact report
EMS	emergency medical services
EQ Zapp	California Earthquake Hazards Zone Application
ESS	energy storage system

Abbreviation	Definition
FCFPD	Fresno County Fire Protection District
FCSD	Fresno County Sheriff's Department
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act of 1973
FHSZ	Fire Hazard Severity Zones
FMMP	Farmland Mapping and Monitoring Program
Fresno COG	Fresno Council of Governments
FTA	Federal Transit Administration
GAMAQI	*Guidance for Assessing and Mitigating Air Quality Impacts*
gen-tie line	generation-tie line (an approximately 200-foot-long new transmission line that would connect to Pacific Gas and Electric Company's 230-kilovolt switching station)
General Plan	Fresno County General Plan
GHG	greenhouse gas
GSA	groundwater sustainability agency
GSP	groundwater sustainability plan
GV	Great Valley
GV 13	Great Valley 13 fault of the Great Valley thrust fault system
GV 14	Great Valley 14 fault of the Great Valley thrust fault system
GWh	gigawatt-hour(s)
HCP	habitat conservation plan
HEPA	high efficiency particulate air
HMBP	Hazardous Materials Business Plan
Hz	hertz
I-5	Interstate 5
in/sec	inches per second
KOP	key observation point
kV	kilovolt(s)
kWh	kilowatt-hour(s)
lb/day	pounds per day
LCI	California Governor's Office of Land Use and Climate Innovation (formerly Governor's Office of Planning and Research)
LCI Guidelines	*Technical Advisory on Evaluating Transportation Impacts in CEQA*
L_{dn}	day-night noise level
LED	light-emitting diode
L_{eq}	equivalent sound level

Abbreviation	Definition
LESA	Land Evaluation and Site Assessment
LOS	Level of Service
LRA	Local Responsibility Area
MMBtu	million British thermal units
MRZ	Mineral Resources Zone
MSA	Metropolitan Service Area
MT CO_2e	metric tons of carbon dioxide equivalent
M_w	“moment magnitude” earthquake rating scale
MW	megawatt(s)
MWac	megawatts of alternating current
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEHRP	National Earthquake Hazard Reduction Program
NERC	North American Electric Reliability Corporation
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOP	notice of preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
OSHA	U.S. Occupational Safety and Health Administration
OWTS	on-site wastewater treatment systems
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
PPV	peak particle velocity
Project	Cornucopia Hybrid Project
PV	photovoltaic
PVWD	Pleasant Valley Water District
RHNA	regional housing needs allocation
RMS	root mean square
ROG	reactive organic gases

Abbreviation	Definition
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	regional water quality control board
SB	Senate Bill
SCADA	supervisory control and data acquisition
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	California Surface Mining and Reclamation Act
SO_2	sulfur dioxide
solar facility	utility-scale solar photovoltaic energy generating facility
SR	State Route
SRA	State Responsibility Area
State Water Board	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology
SWPPP	storm water pollution prevention plan
TAC	toxic air contaminant
UL	Underwriters Laboratories
USA North	Underground Service Alert North
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibels
VOC	volatile organic compound
VMT	vehicle miles traveled
WEAP	worker environmental awareness program
ZEV	zero emissions vehicle

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EXECUTIVE SUMMARY

ES.1 Introduction

Cornucopia Hybrid, LLC (Applicant) has submitted an application with the Fresno County (County) Department of Public Works and Planning for an unclassified conditional use permit (CUP) (CUP No. 3777) and Variance (Variance No. 4184) to construct, operate, maintain, and ultimately decommission the Cornucopia Hybrid Project (Project). As proposed, the Project would generate renewable energy from ground-mounted solar arrays and intermittently store electricity by charging and discharging lithium-ion, flow, or sodium sulfur batteries.

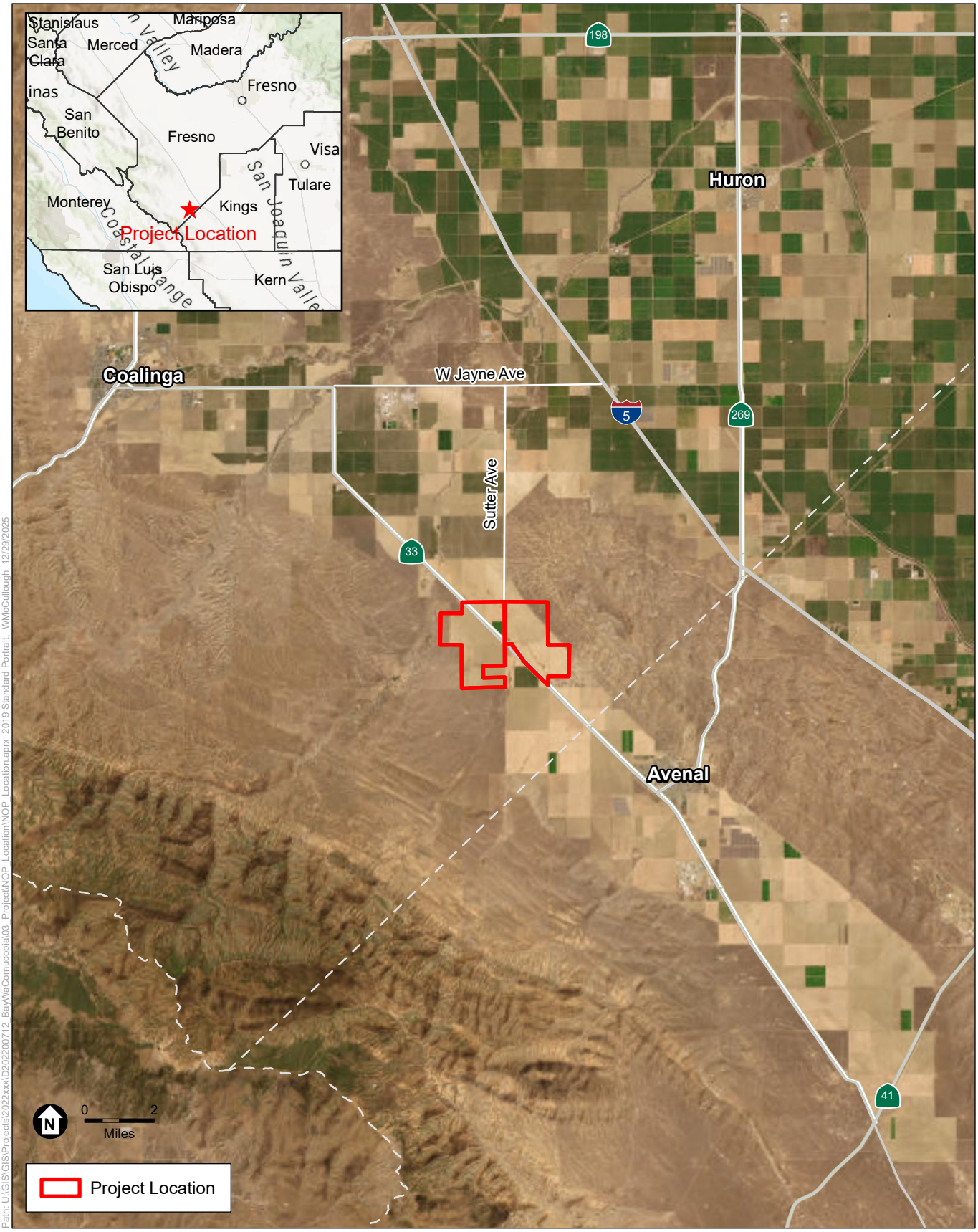
The Project consists of three main components: a photovoltaic (PV) solar facility with a 300-megawatt (MW) alternating current (ac) generating capacity and associated substation; an energy storage system (ESS) with a storage capacity of 300 MWac; and improvements to Pacific Gas and Electric Company (PG&E) infrastructure, including a 230-kilovolt switching station, as needed to interconnect the Project to the regional electric grid. The requested term for the CUP is 35 years. On-site support facilities would include power conversion systems, including bi-directional inverters,[1] transformers,[2] and associated connection lines; heating, ventilation, and air conditioning units or a liquid cooling system for the ESS; fencing; access roads; a supervisory control and data acquisition system; two prefabricated structures to be used for operation and maintenance services and for control services; and security lighting. Diesel generators may be needed temporarily during construction to power the temporary construction lighting.

The Project would interconnect to the regional electric grid at the switching station, which is proposed directly adjacent to the existing PG&E Templeton-Gates transmission lines. Once completed, the Project would generate power from the solar facility during daylight hours. The Project could distribute power to the regional electricity grid for up to a 35-year unclassified CUP term with an option to extend the facility's operation for an additional 5 years based on energy demands. Project construction is anticipated to begin in the fourth quarter of 2026 and to last approximately 39 months, with an initial commercial operation date in the fourth quarter of 2029.

The Project would be developed on private property in unincorporated western Fresno County on approximately 2,446 acres, which the Applicant would lease from private landowners within an approximately 2,568-acre area. The site is located within portions of Assessor's Parcel Numbers 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12S, and 085-110-13S (Project site). The Project site is located approximately 11 miles southeast of the City of Coalinga in unincorporated western Fresno County, 2.8 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5. See **Figure ES-1**, *Project Location*, and **Figure ES-2**, *Project Site*.

[1] An *inverter* connects to the electric power grid and converts direct current (DC) electric power to alternating current (AC).

[2] A *transformer* converts AC from one voltage to another; for example, it can be designed to "step up" to a higher voltage or "step down" to a lower one.



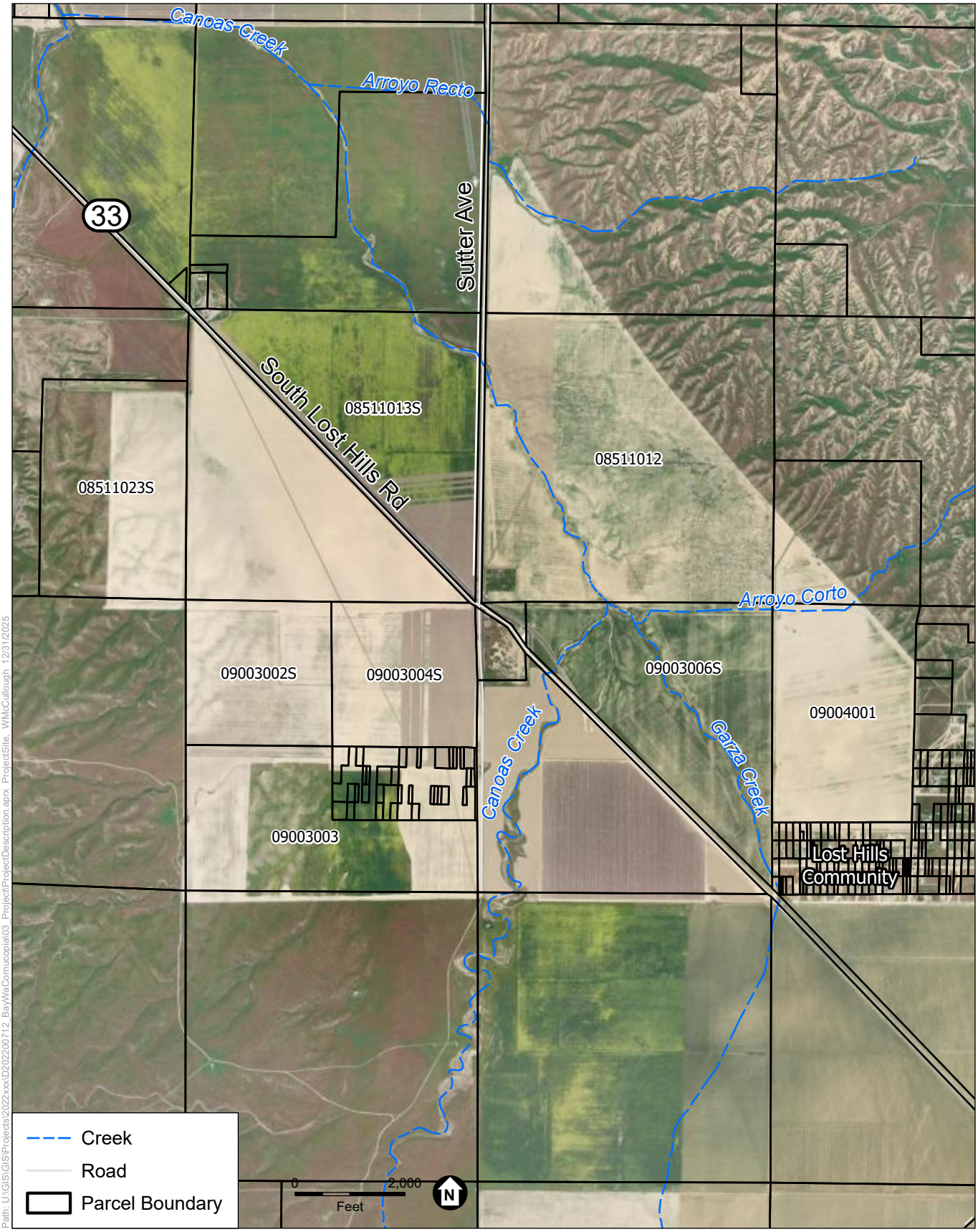
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Source: ESA, 2025

Cornucopia Hybrid Project

Figure ES-1
Project Location

ESA



Source: ESA, 2024

Cornucopia Hybrid Project

Figure ES-2
Project Site

ESA

The Project site is zoned AE-20 and AE-40 (Exclusive Agriculture, 20-acre and 40-acre minimum parcel size). The Variance request would allow for property boundary setback requirements internal to the Property site (on parcels owned by different entities) to be reduced to allow for 20-foot access roads within the reduced setback areas.

The entire Project site is subject to a contract entered into pursuant to the California Land Conservation Act of 1965 (also known as the *Williamson Act*), which enables local governments and private landowners to agree to restrict specific parcels of land to agricultural or related open space use. The Applicant proposes to provide annual sheep grazing to manage vegetation growth within and surrounding the proposed solar PV panels and equipment. However, the Project's proposed solar facility and ESS are not agricultural uses and are not permitted uses on land enrolled in the Williamson Act program. Therefore, the Project site would be required to be petitioned for cancellation of the Williamson Act contracts by the property owner(s) as part of the Project. The County is serving as the lead agency pursuant to the California Environmental Quality Act (CEQA) and its implementing regulations (the CEQA Guidelines). The County has prepared this draft environmental impact report (Draft EIR) (EIR No. 8511) to document its analysis of the direct, indirect, and cumulative environmental impacts of the Project and alternatives to the Project, and to identify mitigation measures to avoid or reduce impacts that have been identified as "significant" for purposes of 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. See Section ES.2, *Purpose and Use of the Draft EIR*, below for further information about CEQA procedures.

Although CEQA does not analyze environmental justice through a separate technical analysis, it is relevant to note that the Project's study area includes the community of Lost Hills. Lost Hills is a designated Disadvantaged Unincorporated Community in Fresno County. The community ranks high on the Climate and Economic Justice Screening Tool for socioeconomic and environmental categories of burden. Specifically, it is a census tract that is above the screening tool's thresholds for one or more environmental, climate, or other burdens and for associated socioeconomic burdens. The community of Lost Hills is a *sensitive receptor* given its geographical proximity to legacy pollution,[3] and a substantial portion of its population is classified as low-income. Sensitive receptors may be more vulnerable to environmental impacts related to human health because they may already be overburdened, underserved, and lacking in socioeconomic resources. For more discussion on how the community may be affected by this Project, see Section 3.4, *Air Quality*; Section 3.10, *Hazards and Hazardous Materials*; Section 3.12, *Land Use and Planning*; Section 3.14, *Noise and Acoustics*; and Section 3.20, *Wildfire.*

ES.2 Purpose and Use of the Draft EIR

CEQA Guidelines §15124(d) requires that an EIR contain a statement briefly describing the intended uses of the EIR. This Draft 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, when deciding whether to approve, approve with modifications, or deny required permits. Agencies that have trustee responsibilities or that may have

[3] *Legacy pollution* is defined here as lands that have at least one abandoned mine, are formerly used defense sites, are at or above the 90th percentile for proximity to hazardous waste facilities, or are near Superfund sites (National Priorities List) or Risk Management Plan facilities.

permitting authority over the Project are identified in Section ES.4, *Permits and Approvals*. These other agencies also may rely on this document when deciding whether to approve permits or issue other approvals for the Project.

ES.3 Project Objectives

The Project's purpose is to generate renewable energy and receive, store, and discharge electric energy from the regional electric grid in a reliable and economical manner. The Project would interconnect to the electric grid at the switching station, which is proposed directly adjacent to the existing PG&E Templeton-Gates transmission lines. The Applicant has identified the following Project objectives:

(1) Fulfill the Applicant's executed large generator interconnection agreement for 300 MW solar PV.

(2) Provide an energy storage system with 300 MW of alternating current battery storage capacity in an environmentally responsible manner.

(3) Increase electricity independence and resilience through the generation of renewable energy.

(4) Develop a site that is proximate to existing high-voltage transmission infrastructure to minimize environmental impacts through the following methods:

  (a) Locating generation facilities in an area that receives adequate solar radiation.

  (b) Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practical.

  (c) Using land that has been fallow due to lack of water.

  (d) Minimizing water use.

  (e) Reducing greenhouse gas emissions.

(5) Support State of California and Fresno County goals of protecting farmland and conserving groundwater through continuing agricultural by providing active grazing lands.

(6) Increase local short-term and long-term renewable energy industry-related 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 Senate Bill 100 (2018, De León).

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

(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.

(10) Support California's efforts to reduce greenhouse gas emissions consistent with California Assembly Bill 32, the Global Warming Solutions Act of 2006, and Senate Bill 32, to at least 40 percent below the statewide greenhouse gas emissions limit by 2030.

ES.4 Permits and Approvals

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

- **Fresno County, Department of Public Works and Planning:** Unclassified CUP to allow development and construction of a hybrid solar energy generation and energy storage facility on lands within the AE-20 and AE-40 zone districts; Variance to allow a reduction in internal property line setback requirements within the AE zone; construction, grading, building, and encroachment permits; Williamson Act contract cancellation.
- **Central Valley Regional Water Quality Control Board:** Notice of Intent to comply with the National Pollutant Discharge Elimination System General Permit for Stormwater Discharge Associated with Construction Activity if construction activities implicate waters of the United States.
- **California Department of Transportation:** 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).
- **California Public Utilities Commission:** Authorizations pursuant to General Order 131-E for the PG&E infrastructure.
- **PG&E:** Utility easement or encroachment agreement, as applicable.

ES.5 Overview of Project Impacts

Sections 3.2 through 3.20 in Chapter 3, *Environmental Analysis*, provide a detailed discussion of the environmental and regulatory setting; direct, indirect, and cumulative impacts of the Project; and mitigation measures designed to reduce potential significant impacts below established thresholds. All resource areas in the CEQA Guidelines Appendix G Environmental Checklist were studied.

ES.5.1 Significant and Unavoidable Impacts

CEQA Guidelines §15126.2(a) requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. As analyzed in Chapter 3, *Environmental Analysis,* the Project would result in no significant unavoidable impacts.

ES.5.2 Significant Irreversible Environmental Changes

CEQA's requirement to analyze irretrievable commitments of resources applies only to (1) the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency; (2) a local agency formation commission's adoption of a resolution making determinations; and (3) projects that require the preparation of an environmental impact statement under the National Environmental Policy Act of 1969 (Public Resources Code §21100.1; CEQA Guidelines §15127). Such an analysis is not required by CEQA for this Project.

ES.5.3 Growth-Inducing Impacts

CEQA Guidelines §15126.2(e) requires a discussion of the ways in which a project "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas)." Population increases caused by the Project could tax existing community service facilities, requiring the construction of new facilities that could cause significant environmental effects.

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 construction and decommissioning, and up to 24 workers, including 2 sheepherders, may be on-site periodically during operation. It is anticipated that this staff would reside in the cities and counties that fall within a 75-mile radius of the Project site, which are described in Section 3.15, *Population and Housing*.[4] Because construction and decommissioning would be temporary, the Project is unlikely to cause substantial numbers of people to relocate to Fresno County. Therefore, this Project would not result in a large increase in employment levels that would substantially induce growth.

Construction workers who live outside of Fresno County would likely 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 them without requiring new construction.[5] Therefore, the Project is not expected to induce population growth, the housing and provision of services for which could cause significant adverse environmental impacts.

The Project could have an indirect impact related to population growth if it were to generate growth or produce a concentration of people beyond what is assumed in local and regional land use plans or in projections made by regional planning authorities. The Project would result in an increase in available and reliable electrical capacity for the region. Therefore, an indirect increase in the population could result from the additional availability of electrical capacity to the region. However, other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have more direct effects on growth, so the overall indirect impact of the Project on population growth would be less than significant.

[4] Consistent with Items 12 and 14 of the County's Solar Facility Guidelines, the Applicant proposes to make reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce and to purchase products and equipment from Fresno County manufacturing facilities and/or vendors. For the purposes of this EIR, *local* means the 75-mile radius surrounding the Project site, which includes the cities and counties listed in Tables 3.15-1 and 3.15-2 and shown in Figure 3.15-1 in Section 3.15, *Population and Housing*.

[5] Among Fresno County's 349,217 total housing units in 2024, the California Department of Finance reported a vacancy rate of 5.6 percent (DOF 2024).

ES.5.4 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation

As analyzed in Chapter 3, the Project would cause no impact in any of the areas identified in **Table ES-1**, *Areas of No Impact*.

TABLE ES-1
AREAS OF NO IMPACT

Resource Area	CEQA Guidelines Appendix G Environmental Checklist Consideration
Aesthetics	• The Project would have no impact related to a substantial adverse effect on a scenic vista. • The Project would have no impact related to substantial damage of scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
Agriculture and Forestry Resources	• The Project would not 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). • The Project would not result in the loss of forest land or conversion of forest land to non-forest use. • The Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use.
Biological Resources	• The Project would have no impact, 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. • The Project would have no impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. • The Project would have no impact 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. • The Project would have no impact on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
Cultural Resources	• The Project would have no impact regarding a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5. • The Project would have no impact regarding a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines §15064.5.
Energy	• The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
Geology, Soils, and Paleontological Resources	• The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map.
Hazards and Hazardous Materials	• The Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would have no impact with regard to these hazards to the public or the environment. • The Project would not be located within 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 and would therefore not result in a safety hazard or excessive noise for people residing or working on the Project site.
Land Use and Planning	• The Project would not physically divide an established community. • The Project would cause no impact to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. • Project could not cause or contribute to any cumulative impact.

Resource Area	CEQA Guidelines Appendix G Environmental Checklist Consideration
Minerals	• The Project would not 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 would not 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. • Cumulatively, the Project would have no impact on mineral resources.
Noise and Vibration	• The Project is not 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, and would not expose people residing or working in the project area to excessive noise levels.
Population and Housing	• The Project would have no impact on the displacement of substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.
Public Services	• Project would have no impact with respect to 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 • There would be no cumulative impact on public services associated with the Project.
Recreation	• The Project would have no impact regarding the increase in use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. • The Project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. • There would be no cumulative impact on recreation associated with the Project.
Transportation	• The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
Utilities and Service Systems	• The Project would not 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.

Table ES-2, *Summary of Impacts and Mitigation Measures*, summarizes the Project's environmental impacts and recommended mitigation measures that, if adopted, would avoid or substantially reduce potential significant impacts of the Project. The analysis of each Project impact is provided on a resource-by-resource basis in Chapter 3.

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Aesthetics		
Impact 3.2-1: The Project could substantially degrade the existing visual character or quality of public views of the site and its surroundings during construction or operation.	None required.	Less than Significant
Impact 3.2-2: The Project would not create a new source of light and glare that would adversely affect day or nighttime views in the area.	None required.	Less than Significant
Impact 3.2-3 The Project would not cause or contribute to a significant cumulative effect on aesthetics, including the existing visual character or quality of public views.	None required.	Less than Significant
Agriculture and Forestry Resources		
Impact 3.3-1: The Project would convert Prime Farmland to non-agricultural use.	None required.	Less than Significant
Impact 3.3-2: The Project would not conflict with existing Williamson Act contracts.	None required.	Less than Significant
Impact 3.3-3: 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.	None required.	Less than Significant
Impact 3.3-4: The Project would not cause a cumulatively considerable contribution to a significant cumulative effect due to conversion of Farmland to non-agricultural use.	None required.	Less than Significant
Impact 3.3-5: The Project would not cause a cumulatively considerable contribution to a significant cumulative effect related to an existing Williamson Act contract.	None required.	Less than Significant
Impact 3.3-6: The Project would not result in a cumulatively considerable contribution to a significant cumulative effect involving changes in the existing environment, which could result in conversion of Farmland to non-agricultural use.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Air Quality		
Impact 3.4-1: The Project could conflict with or obstruct implementation of the applicable SJVAPCD air quality plans.	**Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements** To reduce fugitive dust emissions from travel on unpaved roads, the Applicant shall incorporate the following measures into the project's dust control plan. These measures shall be implemented in conjunction with the SJVAPCD Rule 8021 Measures. • Require that construction workers park personal vehicles at site access points along South Lost Hills Road or Sutter Avenue, both of which are paved roads, to the extent feasible. • Ensure that water trucks apply dust suppression before the commencement of construction activities on any given day, and continue water truck service as needed throughout the construction day. • Restrict construction worker, vendor, and hauling truck travel to paved, gravel, or aggregate access roads, and minimize vehicle travel on exposed, unpaved surfaces. When unpaved surfaces cannot be avoided, use dust suppression.	Less than Significant
Impact 3.4-2: The Project would result in a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.	**Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements**	Less than Significant
Impact 3.4-3: The Project would expose sensitive receptors to pollutant concentrations and risk of contracting Valley Fever.	**Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements** **Mitigation Measure 3.4-2: Minimization of Personnel and Public Exposure to Valley Fever** The fugitive dust control plan to be prepared for the Project shall include the following measures: • Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations. • Wherever possible, grading, and trenching work shall be phased so that earthmoving equipment works well ahead or downwind of workers on the ground. • The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area. • If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust shall leave the area until a full truck resumes water spraying.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
	• All heavy-duty earthmoving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Air (i.e., HEPA) filtered air system to the maximum extent practicable. Where closed-cab equipment is unavailable, operators shall be provided N95 dust masks. • N95 dust masks shall be provided to on-site workers for the duration of the construction period. • Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Fresno County Planning and Community Development Department within 24 hours of the training session. • A Valley Fever informational handout shall be provided to all on-site construction personnel. The handout shall provide, at a minimum, information regarding the symptoms, health effects, preventive measures, and treatment.	
Impact 3.4-4: The Project would result in emissions (such as those leading to odors) that could adversely affect people.	None Required.	Less than Significant
Impact 3.4-5: The Project impact related to conflicting with or obstructing implementation of the applicable air quality plans for SJVAPCD would be cumulatively considerable.	**Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements**	Less than Significant
Impact 3.4-6: The Project impact related to generating a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be cumulatively considerable.	**Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements**	Less than Significant
Impact 3.4-7: The Project impact related to exposing sensitive receptors to pollutant concentrations and to *Coccidioides immitis* spores would be cumulatively considerable.	**Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements** **Mitigation Measure 3.4-2: Minimization of Personnel and Public Exposure to Valley Fever**	Less than Significant
Impact 3.4-8: The Project impact related to emissions (such as those leading to odors) adversely affecting people would not be cumulatively considerable.	None Required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Biological Resources		
Impact 3.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status terrestrial species.	**Mitigation Measure 3.5-1: Exclusion Fencing** Following implementation of APM 2.9.8: Preconstruction Surveys and Avoidance for Special-Status Species, a qualified biologist shall supervise the installation of exclusion fencing for protection of special-status terrestrial wildlife species at the top of bank of the stream courses on the Project site. The exclusion fencing shall be installed at all perimeters of the work area where wildlife may be present to prevent individuals from accessing the work area during construction or decommissioning. It shall be placed at a depth of 6 inches and backfilled with soil to prevent burrowing beneath the fence. The fence shall be maintained in good order throughout the duration of construction.	Less than Significant
Impact 3.5-2: Operation and maintenance of the Project could have a substantial adverse direct or indirect impact on special-status terrestrial species.	None Required.	Less than Significant
Impact 3.5-3: The Project could have a substantial adverse direct or indirect impact on the following special-status species: Swainson's hawk, other raptors, and migratory birds.	None Required.	Less than Significant
Impact 3.5-4: Construction and decommissioning of the Project could interfere substantially with established native resident or migratory wildlife corridors.	**Mitigation Measure 3.5-1: Exclusion Fencing**	Less than Significant
Impact 3.5-5: Operation and maintenance of the Project would not interfere substantially with established native resident or migratory wildlife corridors.	None required.	Less than Significant
Impact 3.5-6: Construction and decommissioning could conflict with local policies or ordinances protecting biological resources.	**Mitigation Measure 3.5-1: Exclusion Fencing**	Less than Significant
Impact 3.5-7: Construction could conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.	None required.	Less than Significant
Impact 3.5-8: The Project would not cause or contribute to a potential significant cumulative impact by having 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 CDFW and USFWS.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.5-9: The Project would not cause or contribute to any significant cumulative effect due to substantial interference with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	None required.	Less than Significant
Impact 3.5-10: The Project would not cause or contribute to any significant impact due to a conflict with General Plan Goal OS-E, which protects wildlife resources.	None required.	Less than Significant
Impact 3.5-11: The Project would not cause or contribute to any significant impact due to a conflict with the provisions of the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan, an adopted habitat conservation plan.	None required.	Less than Significant
Cultural Resources		
Impact 3.6-1: The Project could cause a substantial adverse change in the significance of a newly discovered archaeological resource pursuant to Section 15064.5.	**Mitigation Measure 3.6-1: Cultural Resources Awareness Training** Before the start of ground disturbance, the construction crew shall participate in on-site training on the proper procedures to follow if cultural resources are uncovered during the Project excavations, site preparation, or other related activities. This Worker Environmental Awareness Program shall include a comprehensive discussion of applicable laws and penalties under the law; samples or visuals of artifacts that might be found in the vicinity of the Project site; a discussion of what such artifacts may look like when partially buried or wholly buried and then freshly exposed; a discussion of what pre-contact and historic-era archaeological deposits look like at the surface and when exposed during construction; and instruction that employees are to halt work in the vicinity of a discovery (within 100 feet). This information shall be provided in an informational brochure that outlines reporting procedures in the event of a discovery and shall be provided to all individuals working on-site. **Mitigation Measure 3.6-2: Archaeological Monitoring and Discovery Plan** Before permitted ground-disturbing activities start, an archaeological monitoring and discovery plan shall be prepared by a qualified archaeologist who meets or exceeds the Secretary of the Interior's Standards for Archeology. The monitoring plan shall include a description of the archaeological sensitivity of the Project and archaeological monitoring methodology, which shall entail the monitoring of all ground-disturbing activities within 100 feet of areas of elevated sensitivity, such as those stated in Mitigation Measure 3.6-3. In addition, the monitoring plan shall enable the authority of the monitor to halt construction should a discovery be made; provide contact information upon this discovery; define the resource types typically present within the area; provide a research design should a discovery be made; and provide the protocols for unanticipated discoveries, review and approval protocols, and dispute resolution.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
	Mitigation Measure 3.6-3: Archaeological Monitoring Archaeological monitor(s) and Native American monitor(s) shall be on-site during permitted ground-disturbing activities occurring within 100 feet of areas of elevated archaeological sensitivity, including the boundaries of site CHP-2, the location of once-erected historic structures, as well as Canoas Creek and surrounding streambeds. Activities requiring an archaeological monitor include clearing and grubbing, mass grading, and excavation with mechanical equipment. Ground-disturbing activities requiring hand tools shall be monitored in these areas. During monitoring, the monitors shall examine the work areas for the presence of pre-contact artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic-era debris (e.g., metal, glass, ceramics), and/or soil discoloration that might indicate the presence of a cultural midden. Each monitor shall maintain a daily log documenting ground-disturbing activity, work locations, description, and provenience of any archaeological discoveries (if any), and any necessary action items for monitoring. Archaeological monitoring may be reduced or terminated at the discretion of the archaeologist in consultation with the County, as warranted by conditions such as encountering bedrock, the presence of fill soil, or negative findings during initial ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new location or when ground disturbance will extend to depths not previously excavated (unless those depths are within bedrock). **Mitigation Measure 3.6-4: Unanticipated Discovery of Cultural Resources** In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 100 feet of the find shall halt, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology shall be contacted immediately to evaluate the resource. If the qualified archaeologist determines the resource to be pre-contact, then a Native American representative shall also be contacted to participate in evaluating the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for California Register eligibility shall be completed. If the resource proves to be eligible for the California Register and significant impacts on the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the CEQA Guidelines §15126.4(b)(3)(C) (California Code of Regulations Title 14, §15126.4[b][3][C]). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce significant impacts on cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. Fresno County shall review and approve the treatment plan and archaeological	

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
	testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CEQA Guidelines §15126.4(b)(3)(C).	
Impact 3.6-2: The Project could disturb human remains, including those interred outside of formal cemeteries.	**Mitigation Measures 3.6-1 through 3.6-4.**	Less than Significant
Impact 3.6-3: The Project could cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code §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.	**Mitigation Measures 3.6-1 through 3.6-4.**	Less than Significant
Impact 3.6-4: The Project would contribute to a less-than-significant cumulative impact on cultural resources and tribal cultural resources.	**Mitigation Measures 3.6-1 through 3.6-4.**	Less than Significant
Impact 3.6-5: The Project would not cause a cumulatively considerable contribution to any significant impact due to damage to previously unidentified human remains.	None required.	Less than Significant
Energy		
Impact 3.7-1: Project construction, operation and maintenance, and decommissioning and site reclamation would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption or use of energy.	None required.	Less than Significant
Geology, Soils, and Paleontological Resources		
Impact 3.8-1: The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic groundshaking, liquefaction, or landslides.	None required.	Less than Significant
Impact 3.8-2: The Project would not result in substantial soil erosion or loss of topsoil.	None required.	Less than Significant
Impact 3.8-3: 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.	None required.	Less than Significant
Impact 3.8-4: The Project would not 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.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.8-5: The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**Mitigation Measure 3.8-1: Unanticipated Fossil Discovery** Before any ground-disturbing activities, the Project owner shall develop and implement a paleontological worker education and awareness program. 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 15 feet of the find shall stop immediately until a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) 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 are required, recommendations will be consistent with the standards of 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 (SVP 2010). 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
Impact 3.8-6: The Project would not cause or contribute to a significant cumulative effect related to strong seismic ground shaking, liquefaction, or landslides.	None required.	Less than Significant
Impact 3.8-7: The Project would not cause or contribute to a significant cumulative effect related to erosion or the loss of topsoil.	None required.	Less than Significant
Impact 3.8-8: The Project would not cause or contribute to a significant cumulative effect related to being 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.	None required.	Less than Significant
Impact 3.8-9: The Project would not cause or contribute to a significant cumulative effect on paleontological resources.	**Mitigation Measure 3.8-1: Unanticipated Fossil Discovery**	Less than Significant
GHG Emissions		
Impact 3.9-1: The Project would generate GHG emissions, directly and indirectly, that could have a significant impact on the environment.	None required.	Less than Significant
Impact 3.9-2: Construction, operation, and decommissioning of the Project would be consistent with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.9-3: The Project would not cause or contribute to GHG emissions that would have a significant impact on the environment or be inconsistent with applicable GHG emission reduction plans, policies, or regulations.	None required.	Less than Significant
Hazards and Hazardous Materials		
Impact 3.10-1: Implementation of the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	None required.	Less than Significant
Impact 3.10-2: Implementation of the Project would not create a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	None required.	Less than Significant
Impact 3.10-3: The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing sensitive receptor.	None required.	Less than Significant
Impact 3.10-4: Implementation of the Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	**Mitigation Measure 3.10-1: Construction Traffic Management Plan** At least 30 days before the issuance of construction or building permits, the Applicant and/or its construction contractor shall prepare and submit a traffic management plan to the Fresno County Public Works Department and Caltrans District 6, as appropriate, for approval. The traffic management plan must be prepared in accordance with both the Caltrans *Manual on Uniform Traffic Control Devices* and *Work Area Traffic Control Handbook* and must include, but not be limited to, the following elements: • A temporary traffic control 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. • Identification of the timing of deliveries of heavy equipment and building materials and duration of proposed road closures or obstructions. • A requirement for designated construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed. • A 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 and to advise of alternate routes. • Measures to ensure access for emergency vehicles to the Project site. • Maintenance of access to adjacent properties.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
	• Specification of construction-related vehicle travel and oversize-load haul routes, minimization of construction traffic during the a.m. and p.m. peak hours, distribution of construction traffic flow across alternative routes to access the Project site, and avoidance of residential neighborhoods to the maximum extent feasible. • A requirement to obtain all necessary permits for the work within the road right-of-way or the use of oversized/overweight vehicles that would use County-maintained roads, which may require escort by the California Highway Patrol or a pilot car. Copies of the approved traffic plan and issued permits shall be submitted to the Fresno County Divisions of Public Works and Planning. • A requirement that, prior to the Project's Commercial Operation Date (COD), the Applicant will ensure that Sutter Avenue between Jayne Avenue and SR 33 (Lost Hills Road) is repaired utilizing crack seal and chip seal methods. The Applicant will pull required permits for road improvement and crack and chip seal during this time. The full width of all construction entrances shall be grinded to a depth of 0.3 foot and replaced with hot mixed asphalt for the full width of roadway prior to the chip seal application. The Applicant shall pull a no fee encroachment permit from the County of Fresno for maintenance and repair of the roads during the construction phase.	
Impact 3.10-5: Implementation of the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	None required.	Less than Significant
Impact 3.10-6: Implementation of the Project would not create a cumulative and significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	None required.	Less than Significant
Impact 3.10-7: Implementation of the Project would not create a cumulative and significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	None required.	Less than Significant
Impact 3.10-8: The Project would not contribute to cumulative hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile from an existing sensitive receptor.	None required.	Less than Significant
Impact 3.10-9: The Project would not cause or contribute to a significant cumulative hazard due to physical interference with emergency response or emergency evacuation.	**Mitigation Measure 3.10-1: Construction Traffic Management Plan**	Less than Significant
Impact 3.10-10: Implementation of the Project would not expose people or structure, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Hydrology and Water Quality		
Impact 3.11-1: The Project could violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	None required.	Less than Significant
Impact 3.11-2: The Project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	None required.	Less than Significant
Impact 3.11-3: 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 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 off-site; (iii) create 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) impede or redirect flood flows.	None required.	Less than Significant
Impact 3.11-4: The Project could risk the release of pollutants due to project inundation, due to being located in a flood hazard, tsunami, or seiche zone.	None required.	Less than Significant
Impact 3.11-5: The Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	None required.	Less than Significant
Impact 3.11-6: The Project could result in a cumulatively considerable contribution to cumulative effects related to violation of water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality.	None required.	Less than Significant
Impact 3.11-7: The Project could cause a cumulatively considerable contribution to decreased groundwater supplies or substantial interference with groundwater recharge such that the sustainable groundwater management of the basin could be impeded.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.11-8: The Project could cause a cumulatively considerable contribution to a significant impact due to substantial alteration of 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 off-site; (iii) create 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) impede or redirect flood flows.	None required.	Less than Significant
Impact 3.11-9: The Project could cause a cumulatively considerable contribution to a significant impact related to the risk of release of pollutants due to project inundation.	None required.	Less than Significant
Impact 3.11-10: The Project could cause a cumulatively considerable contribution that could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	None required.	Less than Significant
Noise and Acoustics		
Impact 3.14-1: 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 3.14-1: Nighttime Noise Reduction for Construction Activities** Before the issuance of construction permits for the project, the Applicant shall submit to the County for approval a construction noise reduction plan to be implemented by all contractors as a condition of the contract. The contents of the plan may be included in the final site plan submittal, and should include at a minimum: • Maintain all construction tools and equipment in good operating order according to manufacturers' specifications. • Limit the use of pile drivers and major excavating and earth-moving machinery to daytime hours. • Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) on equipment and trucks used for construction. • 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, and is routinely inspected by the construction manager.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
	• For construction devices that use internal combustion engines, ensure that the engine's housing doors are kept closed, and install noise-insulating material mounted on the engine housing consistent with manufacturers' guidelines, if possible. • To the extent feasible, limit possible evening and nighttime shift work to low-noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment such that noise levels at 50 feet are less than 80 dBA. • Operate noisy equipment only when necessary and switch such equipment off when not in use. All other equipment shall be turned off if not in use for more than 5 minutes. The construction manager shall be responsible for enforcing this provision. • Locate stationary noise sources as far from adjacent receptors as possible, and muffle and enclose such noise sources within temporary sheds, incorporate insulation barriers, or include other measures.	
Impact 3.14-2: The Project would not expose people and/or structures to excessive vibration levels.	**Mitigation Measure 3.14-1: Nighttime Noise Reduction for Construction Activities**	Less than Significant
Impact 3.14-3: The Project would not cause a cumulatively considerable contribution to any significant noise or vibration impact.	None required.	Less than Significant
Population and Housing		
Impact 3.15-1: The Project could directly or indirectly induce unplanned population growth in the area.	None required.	Less than Significant
Impact 3.15-2: The Project would not cause a cumulatively considerable contribution to a significant cumulative effect due to the inducement of unplanned population growth in the area.	None required.	Less than Significant
Transportation		
Impact 3.18-1: Construction of the Project could conflict with a program, plan, ordinance, or policy addressing the circulation (roadway) system.	**Mitigation Measure 3.10-1: Construction Traffic Management Plan** At least 30 days before the issuance of construction or building permits, the Project owner and/or its construction contractor shall prepare and submit a traffic management plan to the Fresno County Public Works Department and Caltrans District 6, as appropriate, for approval. The traffic management plan must be prepared in accordance with both the Caltrans *Manual on Uniform Traffic Control Devices* and *Work Area Traffic Control Handbook* and must include, but not be limited to, the following elements: • A temporary traffic control 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.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
	• Identification of the timing of deliveries of heavy equipment and building materials and duration of proposed road closures or obstructions. • A requirement for designated construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed. • A 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 and to advise of alternate routes. • Measures to ensure access for emergency vehicles to the Project site. • Maintenance of access to adjacent properties. • Specification of construction-related vehicle travel and oversize-load haul routes, minimization of construction traffic during the a.m. and p.m. peak hours, distribution of construction traffic flow across alternative routes to access the Project site, and avoidance of residential neighborhoods to the maximum extent feasible. • A requirement to obtain all necessary permits for the work within the road right-of-way or the use of oversized/overweight vehicles that would use County-maintained roads, which may require escort by the California Highway Patrol or a pilot car. Copies of the approved traffic plan and issued permits shall be submitted to the Fresno County Divisions of Public Works and Planning. • A requirement that, prior to the Project's Commercial Operation Date (COD), the Applicant will ensure that Sutter Avenue between Jayne Avenue and SR 33 (Lost Hills Road) is promptly repaired utilizing crack seal and chip seal methods. The Applicant will pull required permits for road improvement and crack and chip seal during this time. The full width of all construction entrances shall be grinded to a depth of 0.3 foot and replaced with hot mixed asphalt for the full width of roadway prior to the chip seal application. The Applicant will pull a no fee encroachment permit from the County of Fresno for maintenance and repair of the roads during the construction phase.	
Impact 3.18-2: The Project would not conflict or be inconsistent with CEQA Guidelines §15064.3(b).	None required.	Less than Significant
Impact 3.18-3: 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).	**Mitigation Measure 3.10-1: Construction Traffic Management Plan**	Less than Significant
Impact 3.18-4: The Project would result in adequate emergency access.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.18-5: Implementation of the Project would not result in a cumulative and significant conflict with a program, plan, ordinance, or policy addressing the circulation system, including roadway facilities.	**Mitigation Measure 3.10-1: Construction Traffic Management Plan**	Less than Significant
Impact 3.18-6: Implementation of the Project would not result in a cumulative and significant conflict with CEQA Guidelines §15064.3(b).	None required.	Less than Significant
Impact 3.18-7: Implementation of the Project would not result in a cumulative and significant increase in hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	**Mitigation Measure 3.10-1: Construction Traffic Management Plan**	Less than Significant
Impact 3.18-8: Implementation of the Project in combination with cumulative development would not result in a cumulative and significant lack of adequate emergency access.	None required.	Less than Significant
Utilities and Service Systems		
Impact 3.19-1: The Project would result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities that would cause significant environmental effects.	None required.	Less than Significant
Impact 3.19-2: The Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.	**Mitigation Measure 3.19-1: Confirmation of Future Water Supply Availability Prior to Project Extension** To ensure that sufficient water supplies will be available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years after 2065, the Applicant shall identify and provide confirmation to Fresno County demonstrating that the water supply source(s) proposed for use during the remaining operation and decommissioning phases of the Project are sufficient and will not impede sustainable groundwater management of the Pleasant Valley Subbasin. Should sufficient water supplies not be available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years after 2065, then Project decommissioning would be initiated in 35 years after commercial operation without a five-year extension.	Less than Significant
Impact 3.19-3: 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.	None required.	Less than Significant
Impact 3.19-4: The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.19-5: The Project would not cause a cumulatively considerable contribution due to relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	None required.	Less than Significant
Impact 3.19-6: The Project would not cause a cumulatively considerable contribution related to sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	**Mitigation Measure 3.19-1: Confirmation of Future Water Supply Availability Prior to Project Extension**	Less than Significant
Impact 3.19-7: The Project would not cause a cumulatively considerable contribution due to a determination by the wastewater treatment provider that 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.	None required.	Less than Significant
Impact 3.19-8: The Project would not cause a cumulatively considerable contribution to the generation of solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, and would not otherwise impair the attainment of solid waste reduction goals.	None required.	Less than Significant
Impact 3.19-9: The Project would not cause a cumulatively considerable contribution related to compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.	None required.	Less than Significant
Wildfire		
Impact 3.20-1: The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	None required.	Less than Significant
Impact 3.20-2: The Project would not, 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.	None required.	Less than Significant
Impact 3.20-3: 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 on the environment.	None required.	Less than Significant

Environmental Impact*	Mitigation Measures	Level of Significance after Mitigation
Impact 3.20-4: 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 instability, or drainage changes.	None required.	Less than Significant
Impact 3.20-5: The Project would not cumulatively impair an adopted emergency response plan or an emergency evacuation plan.	None required.	Less than Significant
Impact 3.20-6: The Project would not, due to slope, prevailing winds, and other factors, cumulatively exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	None required.	Less than Significant
Impact 3.20-7: 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 cumulatively exacerbate fire risk or result in temporary or ongoing impacts on the environment.	None required.	Less than Significant

ES.6 Overview of Alternatives to the Project

CEQA requires that an EIR 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 that an EIR evaluate a "no project" alternative to allow decision-makers to compare the impacts of approving a project with the impacts of not approving the project. The alternatives development and screening process, alternatives eliminated from further consideration, and alternatives considered in the EIR are described in greater detail in Chapter 4, *Alternatives*.

ES.6.1 Alternatives Eliminated from Further Consideration

Consistent with CEQA Guidelines §15126.6, the County eliminated the potential alternatives listed below from detailed consideration in this EIR if they failed to meet the screening criteria outlined in Section 4.2, *Alternatives Screening and Development Process*:

- Alternative sites, including impaired agricultural lands and other underutilized lands.
- Alternative technologies, including compressed-air energy storage, flywheel energy storage, and hydrogen energy storage alternatives.

ES.6.2 Alternatives Considered in the EIR

The County initially considered and then carried forward the following three alternatives for more detailed evaluation:

- **The CEQA-required No Project Alternative** is described in Section 4.4.1 of Chapter 4, *Alternatives*. CEQA Guidelines §15126.6(e) requires that an EIR evaluate the specific alternative of "no project" along with its impact. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving a proposed project with the impacts of not approving a proposed project. Evaluation of the No Project Alternative, as required by the CEQA Guidelines, would involve analyzing the effects of a no-development/no Project scenario where the existing agricultural use continues as it exists under pre-Project conditions. 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; existing land uses would continue to affect environmental conditions as they do now. The No Project Alternative reflects existing conditions at the time the notice of preparation of this EIR 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.
- **Alternative 1, Adjusted Project Site Alternative,** is described in Section 4.4.2 of Chapter 4. Under Alternative 1, Project components would be shifted to include additional leased acreage within the northwestern portion of the Project site's boundaries. Currently, the Applicant holds lease agreements on 2,446 acres. Under Alternative 1, the solar array located closest to the Lost Hills community would be generally relocated to approximately 126 acres of leased land on the northwestern edge of the Project site. These additional acres (approximately 126 acres) are already part of the Project site and could feasibly contain all infrastructure and other improvements proposed as part of the Project. However, use of the additional acreage area may require more grading and earthwork to prepare the site for solar PV arrays, internal access roads, and other necessary Project components.

- **Alternative 2, Avoidance of Designated Farmland Alternative,** is described in Section 4.4.3 of Chapter 4. Under Alternative 2, Prime Farmland (as shown pursuant to the California Farmland Mapping and Monitoring Program) within the proposed Project boundary would be avoided. As such, Alternative 2 would occupy 2,368 acres of the proposed Project site parcels, approximately 97% of the Project size. The Alternative 2 solar PV generation facility and associated on-site support facilities would be substantially similar to the Project as proposed, except would not include 77.2 acres of FMMP-designated Prime farmland within the Project footprint.

ES.6.3 Comparison of Alternatives

Table 4-10, *Summary of Impacts of the Project and Alternatives*, in Chapter 4 comparatively analyzes the impacts of the No Project Alternative, Alternative 1, and Alternative 2 relative to the Project. 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 active or fallowed agricultural land. **Table ES-3**, *Comparison of Impacts*, summarizes the comparison of impacts among the Project, Alternative 1, and Alternative 2. See Table 4-10 for details.

TABLE ES-3
COMPARISON OF IMPACTS

Resource Area	Alternative 1	Alternative 2
Aesthetics	Similar to but less than the Project	Similar to but less than the Project
Agriculture and Forestry Resources	Same as the Project	Less than the Project
Air Quality	Similar to but greater than the Project	Similar to but less than the Project
Biological Resources	Similar to but greater than the Project	Similar to but less than the Project
Cultural and Tribal Cultural Resources	Same as the Project	Same as the Project
Energy	Same as the Project	Same as the Project
Geology, Soils, and Paleontological Resources	Similar to but greater than the Project	Same as the Project
Greenhouse Gas Emissions	Same as the Project	Similar to but less than the Project
Hazards and Hazardous Materials	Same as the Project	Same as the Project
Hydrology and Water Quality	Same as the Project	Same as the Project
Land Use and Planning	No impacts	No impacts
Mineral Resources	No impacts	No impacts
Noise and Acoustics	Similar to but less than the Project	Same as the Project
Population and Housing	Same as the Project	Same as the Project
Public Services	No impacts	No impacts
Recreation	No impacts	No impacts
Transportation	Same as the Project	Same as the Project
Utilities and Service Systems	Same as the Project	Same as the Project
Wildfire	Same as the Project	Same as the Project

NOTE: Project = Cornucopia Hybrid Project
SOURCE: Data compiled by Environmental Science Associates in 2025

ES.7 Environmentally Superior Alternative

The CEQA Guidelines define the *environmentally superior alternative* as that alternative with the least adverse impacts on 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. In addition, the No Project Alternative would not offset greenhouse gas emissions associated with nonrenewable energy use in the way the Project would make possible. Because the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives.

Determining an environmentally superior alternative can be difficult because of the many factors that must be balanced. Nonetheless, at this draft stage, Alternative 2 has been determined to be preferred. Relative to the Project, it would avoid potential significant impacts to agriculture and forestry resources by avoiding designated Farmland. Alternative 2 also would reduce impacts relative to the Project in four other resource areas: aesthetics, air quality, biological resources, and greenhouse gas emissions. Alternative 2 would not have a greater environmental impact than the Project in any of the resource areas analyzed in this Draft EIR.

Additional information received in or developed during the agency and public review period for the Draft EIR, or during the Project approval process, could affect the balancing of the respective benefits and consequences of the alternatives. Accordingly, although a preliminary determination has been made that Alternative 2 would be the Environmentally Superior Alternative, it would be premature to formally designate it as such at this stage. This preliminary determination as to which alternative is the Environmentally Superior Alternative will be confirmed or corrected in the Final EIR.

ES.8 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 identified areas of controversy as including the issues and questions raised in agency and public comments received during scoping; all comments received during the scoping period are included in the Project Scoping Report, which is included as **Appendix A** to this Draft EIR. Issues identified as potential areas of controversy relate to agricultural resources, air quality, biological resources, cultural and tribal cultural resources, and transportation.

ES.9 Issues to Be Resolved

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

- Determine whether the EIR adequately describes the environmental impacts of the Project.
- Choose among the Project or alternatives.
- Determine whether the recommended mitigation measures should be adopted or modified.
- Determine whether additional mitigation measures need to be applied to the Project.

ES.10 References

DOF (California Department of Finance). 2024. "E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2024." Available: https://dof.ca.gov/wp-content/uploads/sites/352/Forecasting/Demographics/Documents/E-5_2024_InternetVersion.xlsx. Accessed July 1, 2024.

Fresno County. 2024. *2024 Fresno County General Plan Policy Document*. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed August 18, 2024.

CHAPTER 1
Introduction

1.1 Purpose of this Document

This draft environmental impact report (Draft EIR) (No. 8511) is an informational document that identifies and discloses the potential environmental impacts of the Cornucopia Hybrid Project (Project), as proposed by Cornucopia Hybrid, LLC (Applicant). Fresno County (County) will rely on this environmental impact report (EIR), along with other information in the formal record, in deciding whether to approve, approve with modifications, or disapprove the applications for the unclassified conditional use permit (CUP) and Variance requested for the Project (CUP No. 3777, Variance No. 4184). Other agencies with trustee responsibilities or permitting authority over the Project may also rely on this document when deciding whether to approve permits or issue other approvals for the Project.

1.2 Project Overview

The Applicant proposes to construct, operate, maintain, and ultimately decommission a solar energy generation and storage facility on approximately 2,446 acres of private land in western Fresno County. The Project consists of three main components: a photovoltaic solar facility with a 300-megawatt generating capacity and associated substation; an energy storage system with 300 megawatts of alternating current storage capacity; and Pacific Gas and Electric Company (PG&E) infrastructure improvements, including a 230-kilovolt switching station, as needed to interconnect the Project to the regional electric grid. On-site support facilities would include power conversion systems, including bi-directional inverters,[1] transformers,[2] and associated connection lines; heating, ventilation, and air conditioning units or a liquid cooling system for the energy storage system; fencing; access roads; a supervisory control and data acquisition system; two prefabricated structures to be used for maintenance and operation services and for control services; and security lighting.

The Project would interconnect to the regional electric grid at the switching station, which is proposed directly adjacent to the existing PG&E Templeton-Gates transmission lines. Once completed, the Project would generate power from the solar facility during daylight hours. The energy storage system could distribute power to the regional electricity grid for up to a 35-year CUP term with an option to extend the facility's operation for an additional 5 years based on energy demands. Project construction is anticipated to begin in the fourth quarter of 2026 and to last approximately 39 months, with an initial commercial operation date in the fourth quarter of 2029.

[1] An *inverter* connects to the electric power grid and converts direct current (DC) electric power to alternating current (AC).

[2] A *transformer* converts AC from one voltage to another; for example, it can be designed to "step up" to a higher voltage or "step down" to a lower one.

The Project site consists of approximately 2,446 acres of private land in western Fresno County within portions of Assessor's Parcel Numbers 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12S, and 085-110-13S. The site is located approximately 11 miles southeast of the city of Coalinga, approximately 2.8 miles northwest of the city of Avenal, and 4 miles west of Interstate 5. The northwest to southeast State Route 33 (South Lost Hills Road) and north-south Sutter Avenue both bisect the Project site. The small unincorporated Fresno County community of Lost Hills is contiguous to the southeast portion of the Project site off State Route 33.[3]

The Project site is located on parcels that are subject to Williamson Act agricultural preserve contracts. While the Applicant would provide annual sheep grazing to manage vegetation growth on site, the Project's change in the primary land use would not allow for the continuation of existing contracts under the County's Williamson Act Program. Therefore, the Project would require the property owners to petition for cancellation of the Williamson Act contracts.

1.3 Use of This Document by Agencies

California Environmental Quality Act (CEQA) Guidelines §15124(d) requires that an EIR contain a statement briefly describing the intended uses of the EIR. The CEQA Guidelines also 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. Fresno County, as the lead agency for purposes of CEQA, has directed the preparation of this Draft EIR as an informational document. The County has the primary responsibility for considering whether to certify the EIR and whether to grant its discretionary approval of the Project under CUP No. 3777. Other agencies may also rely on information in this Draft EIR to inform their own permitting decisions and approvals for the Project, as described in Section 2.11, *Permits and Approvals*. The purpose of the EIR is not to recommend 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.

1.4 Public Participation

1.4.1 Scoping

On May 3, 2024, the County published and distributed a notice of preparation (NOP) in English and Spanish to advise interested federal, state, regional, and local agencies, as well as the public, that an EIR would be prepared for the Project. The NOP solicited comments on the scope and content of the EIR. It provided a description of the Project and the Project setting with a location map, information on the scoping process, and avenues for submitting public comments. Agencies and members of the public were encouraged to submit their comments to the County by email or U.S. Mail.

Both the English and Spanish versions of the NOP were sent to a mailing list that included California Native American Tribes; federal, state, and local agencies; property owners located within 0.5 mile of the Project site; and other stakeholders, as well as the Office of the Fresno County Clerk and the State Clearinghouse of the Governor's Office of Planning and Research (now Governor's Office of Land Use and Climate

[3] The "Lost Hills community" referenced here is not to be confused with the community of Lost Hills that is located adjacent to Interstate 5 farther to the south in Kern County.

Innovation). The NOP was also posted on the County's website at http://www.co.fresno.ca.us/EIR. The NOP and NOP mailing list are provided in **Appendix A**, *Scoping Report*.

The NOP, including information about a public scoping meeting, was published in legal advertisements in *The Business Journal* in English and Spanish on May 8, 2024. Copies of the legal notices are provided in Appendix A. The advertisements provided basic Project information; the date, time, and participation information for a virtual public scoping meeting; and a brief explanation of the public scoping process.

The County conducted a virtual public scoping meeting on Tuesday, May 14, 2024, beginning at 3:30 p.m. The meeting was conducted in English with simultaneous Spanish interpretation. Copies of the presentation slide deck were posted to the County's website in English and in Spanish in advance of the scoping meeting. The presentation included an overview of the Project, the County's land use and permitting process, the environmental review process, and directions for submitting scoping comments. Meeting presenters and facilitators included Jeremy Shaw of the Fresno County Department of Public Works and Planning and Janna Scott, Selena Whitney, Nicole Lobodzinski, Larry Kass, Marisol Guzman, and Steven Johnson of Environmental Science Associates. Two members of the public called in to the scoping meeting by telephone and 10 others attended via the Zoom online meeting platform. Two oral comments were received during the meeting. Copies of the presentation in English and Spanish and notes of the May 14, 2024, meeting are provided in Appendix A.

The County received seven scoping letters between May 10 and June 4, 2024, input from two people at the scoping meeting, and one letter after the scoping period closed. All scoping comments received are documented in the scoping report and have been considered in the preparation of this Draft EIR. **Table 1-1** lists the names of commenting parties in the order in which the comments were received. The letters and a summary of the scoping meeting comments are provided in Appendix A.

TABLE 1-1
PARTIES SUBMITTING COMMENTS DURING THE CORNUCOPIA HYBRID PROJECT EIR SCOPING PROCESS

Name	Organization/Affiliation	Date
Cameron Vela	Native American Heritage Commission	May 10, 2024
Diana Carroll	Scoping meeting commenter	May 14, 2024
Dirk Poeschel	Scoping meeting commenter	May 14, 2024
Tom Jordan	San Joaquin Valley Air Pollution Control District	May 23, 2024
Monique Wilber	California Department of Conservation, Division of Land Resources	May 28, 2024
Julie A. Vance	California Department of Fish and Wildlife	June 3, 2024
Sophia Markowska	Defenders of Wildlife	June 3, 2024
Diana Carroll	Community member	June 3, 2024
Nichole Escalon	Santa Rosa Ranchera Tachi Yokut Tribe	June 4, 2024
Keyomi Jones	Caltrans District 6	August 7, 2024

Source: Data compiled by Environmental Science Associates in 2024

1.4.2 Other Public Engagement

The Applicant hosted a preliminary open house in June 2024 at the Coalinga Community Center for Lost Hills residents. During this event, the Applicant team provided a short presentation on the project and received feedback on how to best engage the Lost Hills Community. The Applicant team heard and discussed community concerns primarily related to land ownership and land rights. To better engage the community, the Applicant hosted a second open house on August 19, 2025, for the Lost Hills Community. The bilingual open house provided information on the project, answered questions from community members, and explored partnership opportunities for neighborhood improvement projects. Feedback gathered from this event primarily included concern over road access and impact from construction, perimeter security concerns, and interest in collaborative efforts to improve neighborhood lighting and infrastructure.

1.4.3 Public Comment on the Draft EIR

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

Printed copies of the Draft EIR, or electronic copies provided on USB device, will be available to check out 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 Department of Public Works and Planning, Development Services and Capital Projects Division, 2220 Tulare Street, Suite B Annex (below street level), Fresno.
- Fresno County Central Library, 2420 Mariposa Street, Fresno.
- Kings County Library, Avenal Branch, 501 E. Kings Street, Avenal.
- Coalinga-Huron Library District, 305 N. 4th Street, Coalinga.

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 U.S. Mail or email. If a public meeting is to be held, it will be noticed under separate cover. 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.

CHAPTER 2
Project Description

2.1 Project Overview

Cornucopia Hybrid, LLC (Applicant) proposes to construct, operate, maintain, and ultimately decommission the Cornucopia Hybrid Project (Project) on approximately 2,446 acres in western Fresno County. The Project consists of three main components: a photovoltaic (PV) solar facility with a 300-megawatt (MW) generating capacity and associated substation; an energy storage system (ESS) with 300 MW of alternating current (MWac) storage capacity; and Pacific Gas and Electric Company (PG&E) infrastructure improvements, including a 230-kilovolt (kV) switching station, as needed to interconnect the Project to the regional electric grid.

The proposed ESS would comprise lithium-ion, lithium-ion and iron-flow, or sodium sulfur batteries. On-site support facilities would include power conversion systems, including bi-directional inverters,[1] transformers,[2] and associated connection lines; heating, ventilation, and air conditioning units or a liquid cooling system for the ESS; fencing; access roads; a supervisory control and data acquisition system; two prefabricated structures to be used for operation and maintenance (O&M) services and for control services; and security lighting. Diesel generators may be needed temporarily during construction to power the temporary construction lighting.

The Project would interconnect to the regional electric grid at the switching station, which is proposed directly adjacent to the existing PG&E Templeton-Gates transmission lines. Once completed, the Project would generate power from the solar facility during daylight hours. The Project could distribute power to the regional electricity grid for up to a 35-year unclassified conditional use permit term with an option to extend the facility's operation for an additional 5 years based on energy demands. Project construction is anticipated to begin in the fourth quarter of 2026 and to last approximately 39 months, with an initial commercial operation date in the fourth quarter of 2029.

The Project site is located on parcels that are subject to Williamson Act agricultural preserve contracts (pursuant to the California Land Conservation Act of 1965), which enable local governments and private landowners to agree to restrict specific parcels of land to agricultural use. The Applicant proposes to provide annual sheep grazing to manage vegetation growth within and surrounding the proposed solar PV panels and equipment. Although sheep grazing is an agricultural activity, the Project's change in the primary land use would not allow for the continuation of existing contracts under the County's Williamson Act Program. Therefore, the Project would require the property owners to petition for

[1] An *inverter* connects to the electric power grid and converts direct current (DC) electric power to alternating current (AC).

[2] A *transformer* converts AC from one voltage to another; for example, it can be designed to "step up" to a higher voltage or "step down" to a lower one.

cancellation of the Williamson Act contracts.Finally, the Applicant has submitted a Variance application to accompany the CUP, requesting reductions from setback requirements under the AE (Exclusive Agriculture) zone district. Specifically, the Variance would reduce the front and side-yard setback requirements from 35 feet and 20 feet, respectively, down to 10 feet on either side of adjoining property boundaries within the proposed project. Otherwise, the Applicant would be required to provide setbacks on parcels internal to the Project site, or parcels owned by different landowners would be required to merge their parcels to build across property lines. Internal 20-foot access roads would be located along the reduced setback areas to facilitate access between Project components.

2.2 Location of the Project Site

The Project site is located approximately 11 miles southeast of the City of Coalinga in unincorporated western Fresno County, approximately 2.8 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5 (I-5). As shown in **Figure 2-1**, *Project Location*, the northwest-to-southeast State Route (SR) 33 (South Lost Hills Road) and the north-to-south Sutter Avenue both bisect the Project site. The small unincorporated Fresno County community of Lost Hills[3] is contiguous to the southeast portion of the Project site off SR 33.

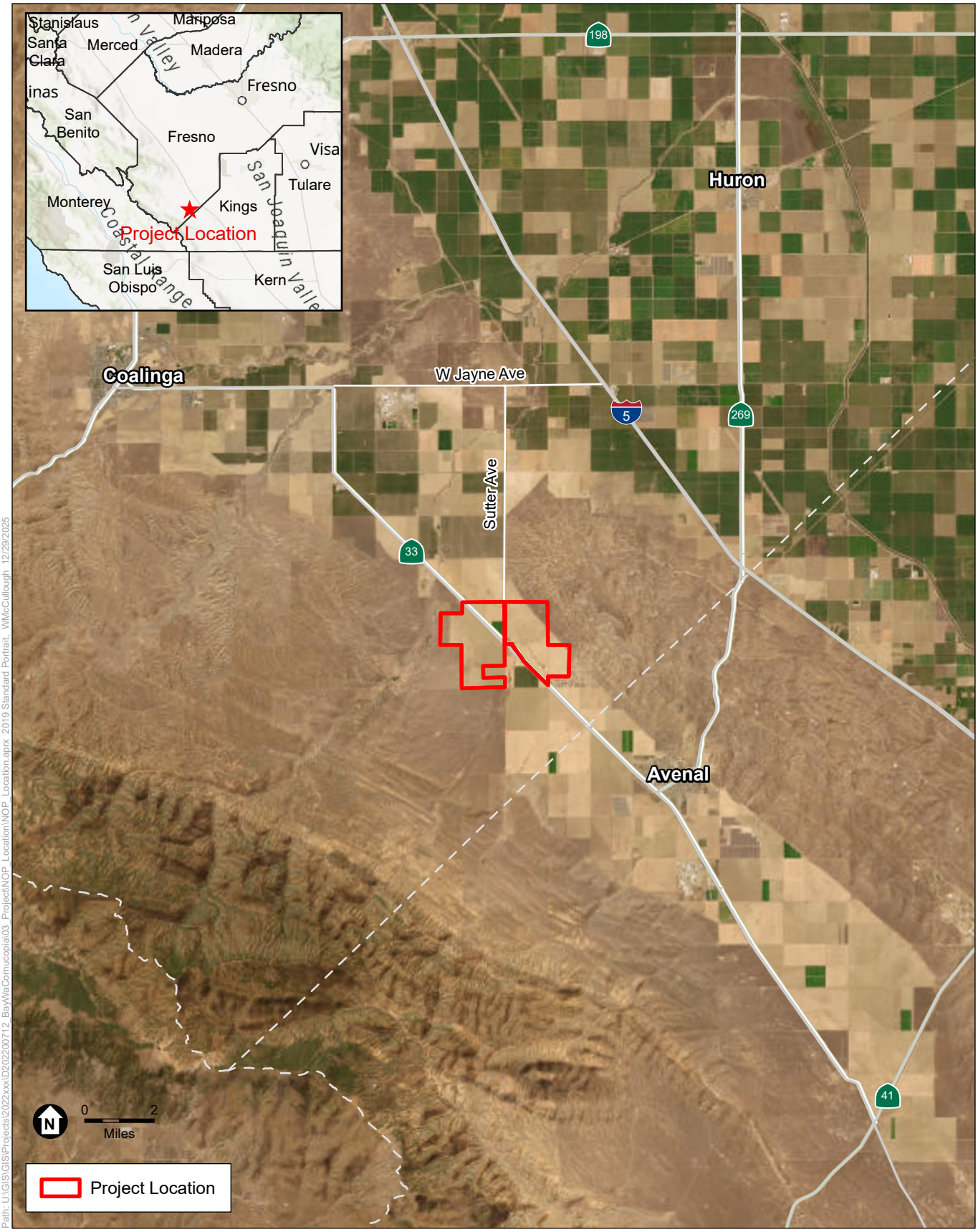
The Project site totals approximately 2,446 acres, which the Applicant would lease from private landowners within an approximately 2,955.4-acre area. The Project site comprises portions of eight parcels, as identified by Assessor's Parcel Number (APN), address, and Williamson Act contract number in **Table 2-1**, *Parcel Identification*. The Project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36; Township 22 South, Range 16 East, Sections 1 and 2; and Range 17 East, Section 6 of the Avenal, California, U.S. Geological Survey 7.5-Minute Topographical Quadrangle Map. **Figure 2-2**, *Project Site*, identifies the Project footprint and parcel boundaries with APNs, intersecting roads, and named drainage features. I-5 and SR 33 provide regional access to the Project site, while SR 33 and Sutter Avenue provide local access.

TABLE 2-1
PARCEL IDENTIFICATION

APN	Size (acres)	Site Address	Williamson Act Contract Number
090-030-06S	613.8	46744 South Lost Hills Road (SR 33)	AP-3212
090-030-04S	162.5	N/A	AP-1993
090-030-02S	165.7	N/A	AP-2385
090-030-03	249.6	N/A	AP-982
090-040-01	235.2	N/A	AP-982
085-110-23S	240.1	N/A	AP-1995
085-110-12S	642.1	N/A	AP-2357
085-110-13S	646.4	N/A	AP-3217

Notes: N/A = not applicable; SR = State Route
Sources: Fresno County 2024a, 2024b.

[3] The "Lost Hills community" referenced here is not to be confused with the community of Lost Hills that is located adjacent to I-5 farther to the south in Kern County.

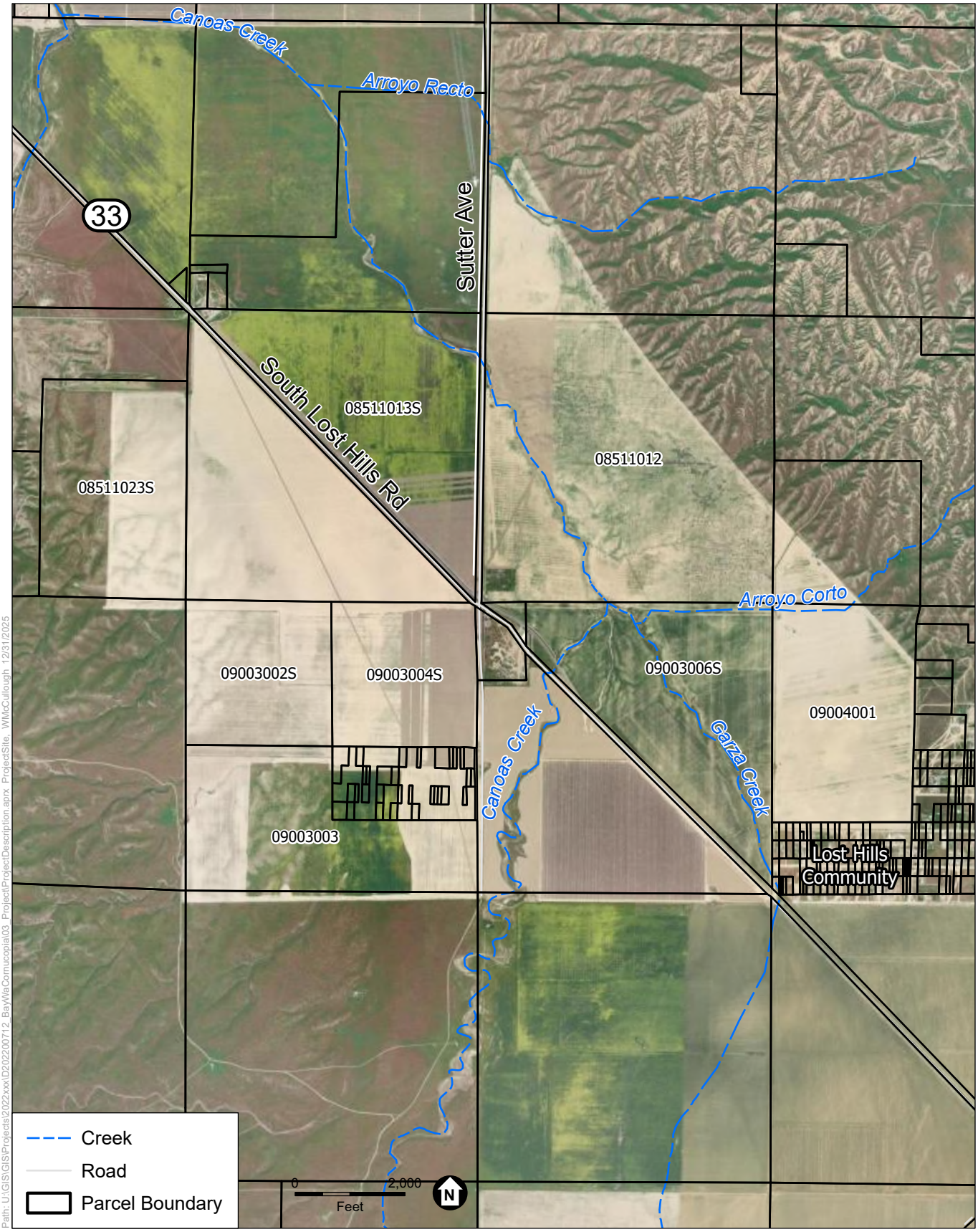


Source: ESA, 2024

Cornucopia Hybrid Project

Figure 2-1
Project Location

ESA



Source: ESA, 2024

Cornucopia Hybrid Project

Figure 2-2
Project Site

ESA

2.3 Existing Land Uses

2.3.1 On-Site Land Uses

The approximately 2,446-acre site is relatively flat and undeveloped. Consistent with its Fresno County General Plan designation as Agriculture (Fresno County 2024c) and its zoning designation as Exclusive Agricultural (AE) (Fresno County 2024d), the Project site has been used for dry-farmed (unirrigated) agricultural production of wheat and grazing fodder. Based on California Department of Conservation data, the Project site contains a mixture of Farmland of Local Importance and Prime Farmland (DOC 2024).

SR 33 and Sutter Avenue traverse the Project site from northwest to southeast and from north to south, respectively. Multiple unpaved access roads give access to various parts of the Project site. Improvements include fencing and locked gates to prevent unauthorized access and limited infrastructure associated with the agricultural use of the land such as groundwater supply wells and irrigation infrastructure. Additionally, a transmission line traverses the Project site and would be adjacent to the substation and switching station area. Canoas Creek generally aligns north to southeast through the Project site, crossing Sutter Avenue and then diverging and continuing within drainages that flow to the south and southeast.

Two water wells within the Project site produce water from the underlying Pleasant Valley Subbasin of the San Joaquin Valley Groundwater Basin; however, a final source of water to use during construction has not been designated. Current plans are to improve the well located north of SR 33 to provide water for dust control during construction.

2.3.2 Surrounding Land Uses

The following land uses surround the Project site:

- *North:* Agriculture (cultivated and fallow) and undeveloped lands
- *East:* Agriculture (cultivated and fallow), residential development, and undeveloped land
- *South:* Agriculture (cultivated and fallow)
- *West:* Agriculture (grazing)

The northeastern boundary of the Project site is adjacent to the western terminus of the Kettleman Hills, with vacant lands characterized by low rolling hills. The southeastern portion of the Project site is directly adjacent to the unincorporated community of Lost Hills. Eight existing residences and several structures within the Lost Hills community would be located adjacent to the Project boundary. The closest residence would be approximately 200 feet from the nearest proposed PV panel. A commercial property that contains a warehouse is located southeast of the intersection of SR 33 and Sutter Avenue. The area surrounding the remainder of the Project site is predominantly agricultural (undeveloped rangeland or intermittent agricultural uses) or vacant. Utility poles and power lines are located around the perimeter of the site. A construction aggregate (primarily rock, sand, and gravel) materials site is located approximately 1 mile away from the northwestern Project boundary along SR 33.

2.4 Project Objectives

The Applicant's primary goal for the Project is to construct and operate an economically feasible, commercially financeable 300 MWac solar PV power plant and 300 MWac energy storage system.

The objectives of the Project are as follows:

(1) Fulfill the Applicant's executed large generator interconnection agreement for 300 MW solar PV.

(2) Provide an energy storage system with 300 MWac battery storage capacity in an environmentally responsible manner.

(3) Increase electricity independence and resilience through the generation of renewable energy.

(4) Develop a site that is proximate to existing high-voltage transmission infrastructure to minimize environmental impacts through the following methods:

  (a) Locating generation facilities in an area that receives adequate solar radiation.

  (b) Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practical.

  (c) Using land that has been fallow due to lack of water.

  (d) Minimizing water use.

  (e) Reducing greenhouse gas emissions.

(5) Support State of California and Fresno County goals of protecting farmland and conserving groundwater through continuing agricultural use by providing active grazing lands.

(6) Increase local short-term and long-term renewable energy industry-related 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 Senate Bill 100 (2018, De León).

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

(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.

(10) Support California's efforts to reduce greenhouse gas emissions consistent with California Assembly Bill 32, the Global Warming Solutions Act of 2006, and Senate Bill 32, to at least 40 percent below the statewide greenhouse gas emissions limit by 2030.

2.5 Description of the Project

The Project consists of three main components: a solar PV facility with 300 MW generating capacity, an energy storage system with 300 MWac battery storage capacity, and PG&E improvements. Other necessary infrastructure would include a substation, connection to an existing PG&E transmission line, two prefabricated structures, access roads, parking, security fencing and lighting, and landscaping. The Project would comply with the County's Solar Facility Guidelines (Fresno County 2017) by retaining a 50-foot buffer between Project facilities (excluding fencing) and surrounding properties. Preliminary site plans indicate that structural improvements and equipment would be kept within 50 feet of the site boundary. **Figure 2-3**, *Project Site Plan*, displays Project components within the Project site.

2.5.1 Solar Facility and Energy Storage Components

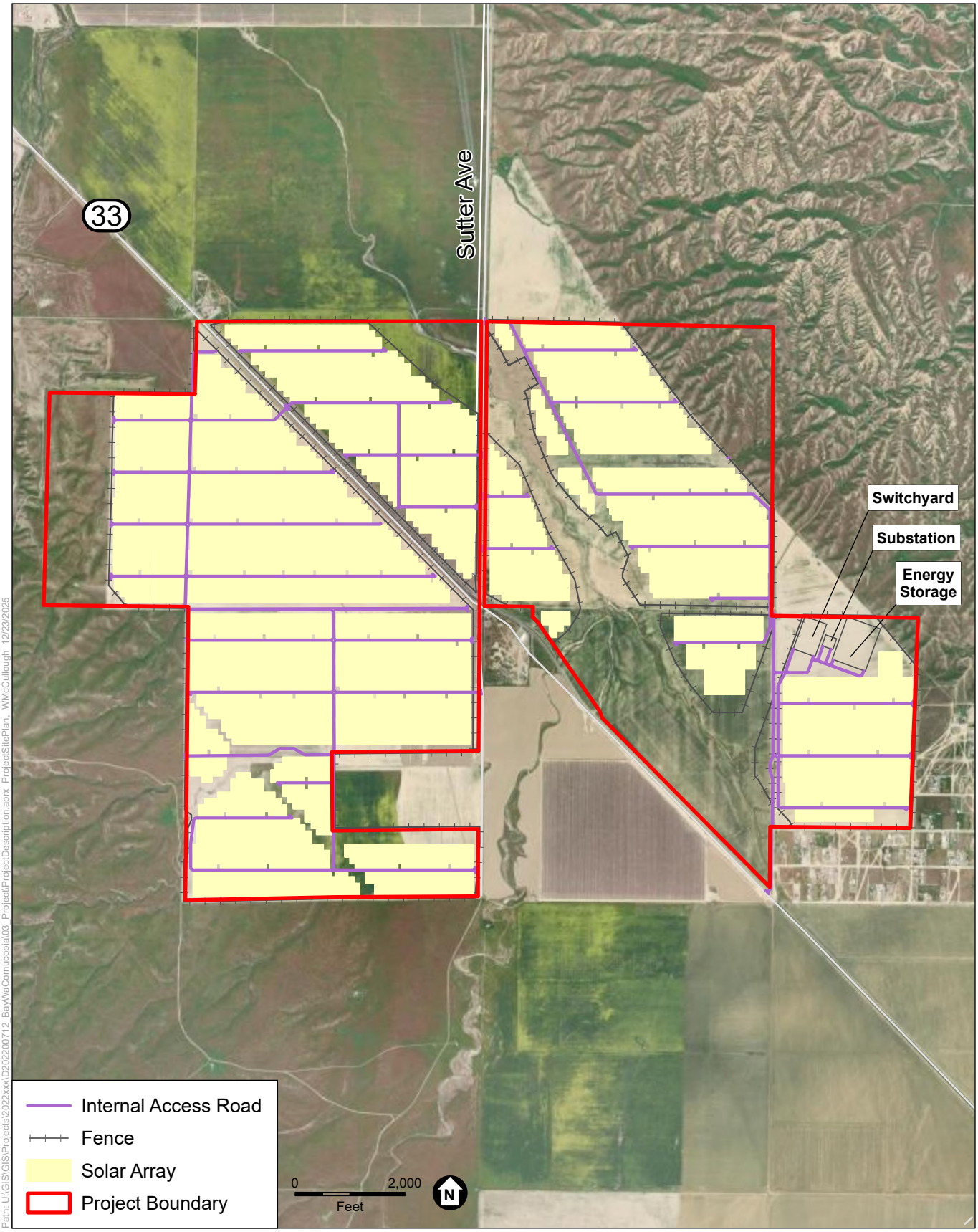
2.5.1.1 Solar PV Generating Components

The Project would be composed of multiple solar arrays (i.e., PV modules arranged in rows) and electrically connected to create a utility-scale solar PV generating facility. Each solar array would consist of PV solar modules supported by racking systems and a single-axis tracking system, which would enable the panels to track the sun throughout the day. The PV modules would convert sunlight into electricity. At full tilt, the PV modules would provide approximately 1.5 feet of ground clearance below the panels. **Figure 2-4**, *Typical Tracker Section Detail*, shows the plan and side (elevation) views of a typical single-axis tracking system.

For a tracking system, helical piles or metal piers would be driven into the ground to support the solar panels. The exact length of each row of modules would vary, but each row would be separated by approximately 22 feet to accommodate maintenance personnel and design parameters that meet applicable Fresno County fire safety requirements. The solar modules would be self-contained and designed to withstand exposure to the elements. They would be certified to comply with all industry-standard quality testing and would be electrically connected and grounded. To convert the energy produced by the proposed facility (direct current [DC]) into usable alternating current (AC) power, the modules would be connected to power inverters. The energy would be transferred from these inverters to a switching station that would ultimately transfer the power to the regional electrical grid.

Medium-voltage power lines would cross SR 33 and Sutter Avenue to connect the arrays to the electrical collector system. The medium-voltage power lines would be placed either underground (bored under the roads) or overhead.

No solar arrays or other Project components would cross property boundaries. Under the Fresno County Zoning Code, the AE zoning designation requires that all front- and side-yard setbacks be 35 feet and 20 feet, respectively. Since the Project encompasses parcels under different ownership, property boundaries that are "internal" to the Project site would still qualify as front- or side-yards and be subject to AE zone setback requirements. However, a Variance would allow for reductions in the required front- and side-yard setbacks on property boundaries that are internal to the Project site. Additionally, the variance will allow for internal access roads to be located along internal property boundaries.

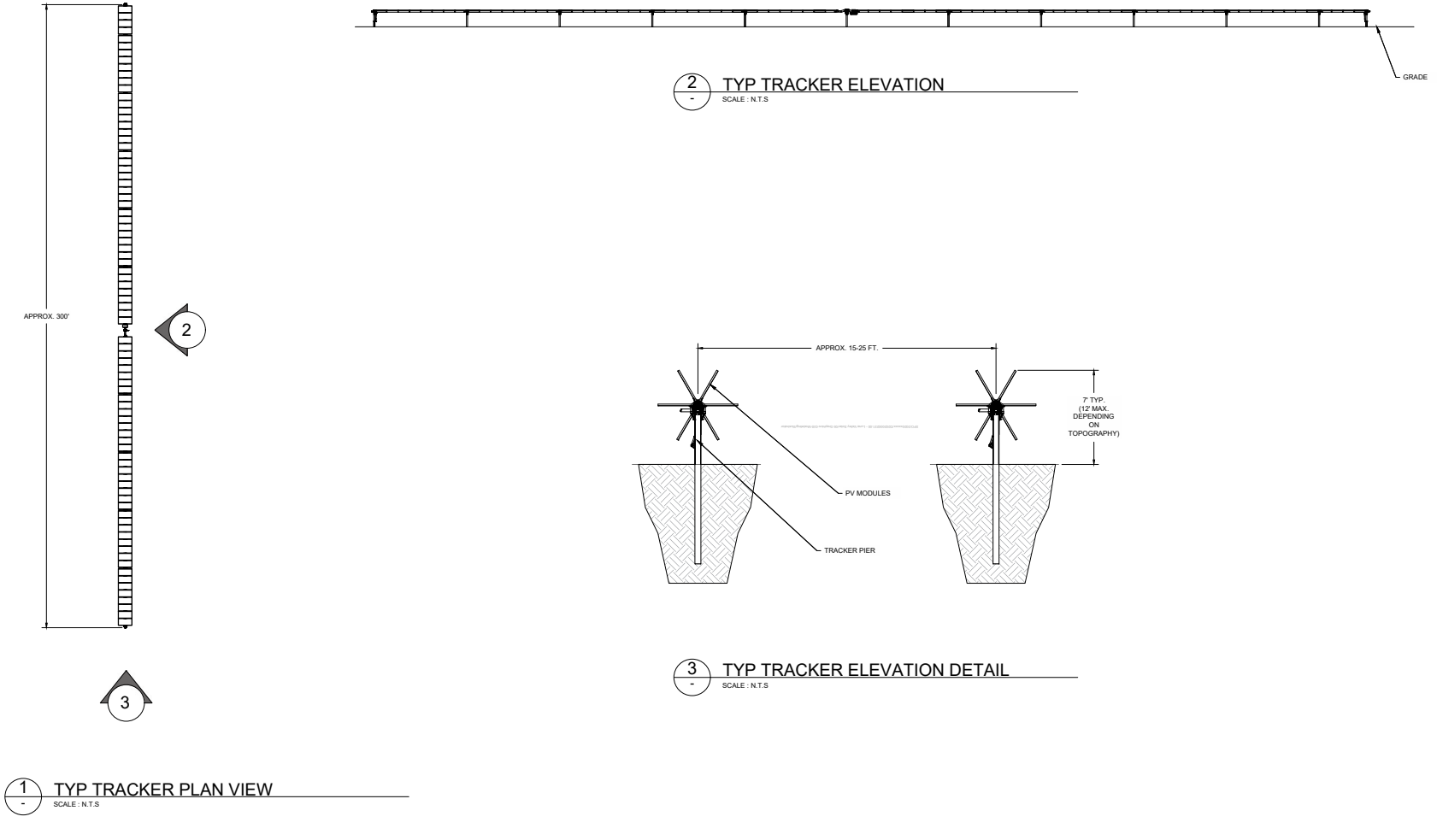


Source: ESA, 2024

Cornucopia Hybrid Project

Figure 2-3
Project Site Plan

ESA



1 - TYP TRACKER PLAN VIEW
SCALE : N.T.S

2 - TYP TRACKER ELEVATION
SCALE : N.T.S

3 - TYP TRACKER ELEVATION DETAIL
SCALE : N.T.S

SOURCE: Revamp Engineering, Inc., 2020

Cornucopia Hybrid Project

Figure 2-4
Typical Tracker Section Detail

ESA

2.5.1.2 Substation

A substation would be constructed in the southeast corner of the Project site (see Figure 2-3), directly adjacent to a new PG&E switching station. The substation would receive consolidated intermediate-voltage cables from the electrical collector system and would step the voltage up to 230 kV using high-voltage transformers located within the substation. The substation would include an electrical control building and would connect to PG&E's 230 kV switching station by an approximately 200-foot-long new transmission line or "generation-tie" line (gen-tie line), with no poles proposed as part of the gen-tie line design.

The substation would have access to communication systems in the area to comply with the Operator utility monitoring and control requirements of the Federal Energy Regulatory Commission and California Independent System Operator. Therefore, underground or aboveground telecommunication lines would be installed within the Project site to provide the necessary communication capabilities.

Table 2-2, *Solar Facility and Energy Storage Project Components*, describes the components of the solar facility and energy storage project and summarizes the acreage allocated to, and ground disturbance that could be caused by, each Project component.

TABLE 2-2
SOLAR FACILITY AND ENERGY STORAGE PROJECT COMPONENTS

Name	Description	Long-Term Disturbance (acres)
Solar Panel Array	Rows of solar panels on the north and south sides of SR 33 and east and west sides of Sutter Avenue. The solar panels would be installed using either steel piles or concrete foundations, depending on soil conditions. The array would be composed of 615-watt modules, with approximately 108 modules placed on racking to create one full row.	1,469
Solar Facility Substation	An electric system facility where direct electricity generated by the solar array would be stepped up from medium voltage (34.5 kV) to high voltage (230 kV) for transmission and interconnection at PG&E's 230 kV switching station.	1
Generation-Tie Line	An approximately 200-foot-long, 230 kV generation-tie line to connect the solar substation to the PG&E 230 kV switching station. No poles are anticipated to be installed for this purpose.	---
Battery ESS	Battery banks housed in electrical enclosures with buried electrical conduit, connected to inverters. The battery ESS would produce up to 300 MWac with a megawatt-hour rating of 1,200 MWhAC.	12
O&M Building	Prefabricated building used for O&M.	0.01
Control Services Building	Prefabricated building used for control services.	0.01
Total	**Project Site**	**1,482.02**

Notes: ESS = energy storage system; kV = kilovolts; MWac = megawatts of alternating current; MWhAC = megawatt-hours of alternating current; O&M = operation and maintenance; PG&E = Pacific Gas and Electric Company; SR = State Route

Source: Data compiled by Environmental Science Associates in 2024

The substation would have access to communication systems in the area to comply with the Operator utility monitoring and control requirements of the Federal Energy Regulatory Commission and California Independent System Operator. Therefore, underground or aboveground telecommunication lines would be installed within the Project site to provide the necessary communication capabilities.

2.5.1.3 Energy Storage System

Battery Technologies

The proposed ESS could store up to 300 MWac of electricity and would receive energy from and deliver energy to the regional electricity grid. The ESS would consist of battery banks housed in electrical enclosures and buried electrical conduit. The Project would use the best battery technology available at the time of construction, which the analysis in this EIR assumes would be one or more of the following: lithium-ion, flow, or sodium sulfur batteries.

The ESS would be converted to AC power via power inverters. The inverter output would be stepped up to 34.5 kV and then combined at the Project substation, where the power would be stepped up to 230 kV and interconnected to the grid via the PG&E 230 kV switching station. The ESS would be located adjacent to the 230 kV Project substation.

The ESS would be charged from the grid using the AC-coupled design configuration. This charging design allows the electric grid operator to provide more responsive services by providing more visibility and control to stabilize the grid to balance customer demands. Grid charging allows for the ESS to be charged at times when it is most efficient for the overall transmission grid and outside of peak electricity usage times. Therefore, the ESS would likely be charged primarily during times when the grid has an excess of solar energy generation but would have the flexibility to be charged during other times of the day.

2.5.1.4 Other Facilities and Infrastructure

Services Buildings

Two prefabricated buildings would be provided on-site. One building would be used for O&M services and the second would be used for control services. The prefabricated buildings would each measure approximately 20 feet by 20 feet and would include restroom facilities connected to an on-site septic system. Both buildings are intended to be used only as needed during the Project's operation.

On-Site Well and Water Storage Tanks

The Project would not require regular water use outside of dust control during construction; however, on-site water access would be required for fire and emergency management purposes and for operational use, which includes cleaning solar panels to maintain efficiency, conducting soil conditioning and minimal irrigation, and water to hydrate grazing sheep.

Two wells within the Project site may be used to provide construction and operational water. The Project anticipates improvements to an existing well at the intersection of Sutter Avenue and SR 33 for construction use. Additionally, water storage tanks would be stationed on-site to ensure that water would be available for fire safety. The storage tanks would have a total capacity of up to 30,000 gallons, or approximately 0.09 acre-feet (AF), and would be refilled as needed—assumed to be approximately two times per year—during Project operation to replace water loss through evaporation. Approximately

540 AF per year of water would be required during Project construction and approximately 31 AF per year would be required during operation (Rincon 2024). During decommissioning, the Project would require water use for landscaping and dust suppression, as well as on-site water access for fire and emergency management. The decommissioning water use would be comparable to the construction-related water use.

Water, Sewer, or Electricity Utility Infrastructure

The Project would not require connections to existing water and sewer utilities. Diesel generators would be used for electricity needs during construction. Electricity would be taken from the distribution feed during operation. The Project would include a small uninterruptible power supply for the ESS facility to use during rare events when all or part of the facility is disconnected from the distribution system. The uninterruptible power supply would be sized to accommodate proposed control systems and minimal targeted heating, ventilation, and air conditioning system loads for equipment protection by providing a certain amount of run time based on temporary energy storage. The power for the ESS would charge from the power grid, which would be supplemented by the solar array to maintain battery safety and warranty temperature parameters when grid power is not available.

Meteorological Data Collection System

A preconstruction, one-year meteorological data collection station would be installed and decommissioned before construction begins. After construction, approximately 15 stations would be installed. A typical station would include sensors to measure solar irradiance, wind speed, ambient temperature, snow depth, and other meteorological conditions.

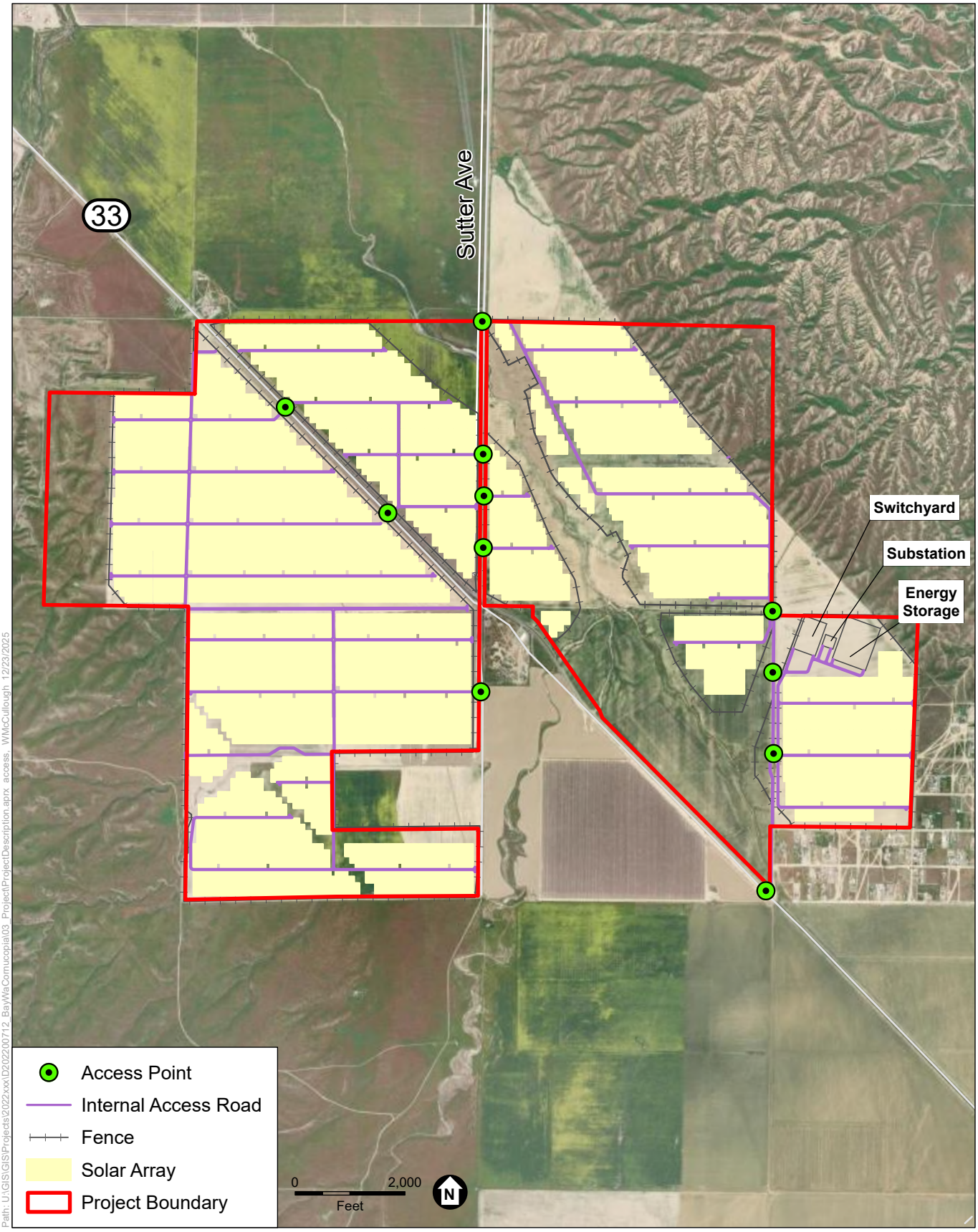
Telecommunications Facilities

The Substation electrical control building would be used for telecommunication activities. Telecommunication lines would be trenched approximately 3–4 feet deep and 2–3 feet wide, as applicable.

If required, the trenches would be filled with base materials above and below the conductors and communication lines to ensure adequate thermal conductivity and electrical installation characteristics. The topsoil from trench excavation would be stockpiled adjacent to the trench for use as backfill and would ultimately compose the uppermost layer of the trench. Excess material from the foundation and trench excavations would be used for site leveling. Where possible, trenching would be located beneath driveways and roads to minimize disturbance.

Site Access, Internal Circulation, and Parking

The Project site would be accessible for construction, operation, and emergency access from SR 33 and Sutter Avenue, both of which are paved roads. Multiple entrances would be available either directly off SR 33 and Sutter Avenue, or on existing dirt roads that connect to Sutter Road, as shown on **Figure 2-5**, *Project Access Points*. The Applicant also proposes access points directly off SR 33, for project access and emergency access purposes, pursuant to County and Caltrans approval of a traffic management plan and necessary permitting.



Source: ESA, 2024

Cornucopia Hybrid Project

Figure 2-5
Project Access Points

ESA

Access points directly on SR 33 would provide access to the northwestern and southwestern solar arrays and Project components. One additional, existing access point off SR 33 along an existing dirt road adjacent to the unincorporated Lost Hills community would provide access to a solar array in the middle of the southeastern portion of the site and the non-array components (the ESS, switchyard, substation, control and O&M buildings, etc.). Access points directly on Sutter Avenue would provide entrance to the solar arrays in the northern and southwestern portions of the Project area. Site access points would comply with requirements set forth by the California Department of Forestry and Fire Protection or the Fresno County Fire Protection District to ensure adequate emergency access. Additionally, road improvements required by the Fresno County Road Maintenance and Operations Division (e.g., installation of turn pockets to facilitate safe ingress/egress or other safety improvements) would be implemented before the initiation of Project operation.

Within the Project site, a network of access roads would provide access between and among the various Project components (see Figure 2-5), totaling approximately 20.25 miles of access roads altogether. Gravel access roads approximately 20 feet in width would be constructed within the perimeter of the Project site and 20-foot-wide aggregate base access roads would be constructed between Project components, except that the ESS yard roads would be 24 feet wide. The surface of the roads would be at grade to allow water to sheet flow across the site as it currently does. All designated access roads would provide sufficient space for emergency response vehicles.

To meet Fresno County Code parking requirements, the Project would include two permanent parking spaces to accommodate O&M staff. Parking spaces would be composed of stone aggregate.

Fencing and Security

The site would include a 6-foot-tall galvanized chain-link fence with an additional 1 foot of height containing three strands of barbed wire for security. The chain-link fence would be placed around approximately 1,938 acres of the 2,446-acre Project site to surround the Project components. The perimeter fences would restrict on-site access to authorized personnel only. The bottom of the perimeter fence would have a 4-inch to 6-inch continuous gap around the entire perimeter to allow wildlife passage through the solar facility.

Within the Project site, the proposed high-voltage on-site substation would be surrounded by a separate, approximately 6-foot-tall security fence with an additional foot of three-strand barbed wire extension at the top. To prevent theft and vandalism, temporary fencing would be provided during the construction period to secure designated equipment laydown areas. A temporary storage container might be used to house tools and other small portable construction equipment. In addition, security guards would regularly monitor the site. All fence posts for perimeter and internal security fencing would be installed no more than 10 feet apart, at approximately 5 feet below grade per post. Access gates would be the same height as the fencing. Footing for the gate posts would be approximately 10 inches wide by 36 inches (3 feet) deep.

Lighting

The Project would include low-elevation (less than 14 feet in height) solar and battery-powered motion-sensitive light-emitting diode (i.e., LED) lights at each of the six site access gates and the Project substation. Lighting would switch on only when personnel enter the area (through either a motion sensor or a manually activated switch). The motion sensor or manually activated lighting would help reduce

disturbance to wildlife in the area, because lights would be activated only when personnel are present. All safety and emergency services signage would be lit when the lighting is switched on. Electrical power to supply the lighting would be obtained from a distribution feed or battery charged from a solar panel. Lighting would be implemented only in areas where it is necessary for safety, security, and operations purposes. All lighting would be shielded and directed downward to minimize illumination of the night sky or surrounding viewers beyond the Project site.

Signage

Signage would identify the Project owner and provide information for emergency response and security purposes. One non-flashing sign would be located at each street frontage, either installed on the fence or mounted in the ground near the main entry gates. Small-scale "No Trespassing" and "Private Property" signs would also be posted at the main entry gates and intermittently along the perimeter fencing on all exterior parcel boundaries for security purposes. Additional signage would include information about emergency services and high-voltage safety indicators located on the perimeter fence near the main entrance and at the access gates. All signage would comply with National Electric Code signage requirements.

2.5.2 Water, Wastewater, Power, and Hazardous Materials

2.5.2.1 Water

During construction, water would be needed for dust control during grading and other ground disturbance to prepare the site. Water would be provided on-site for fire and emergency management purposes with the installation of a 30,000-gallon aboveground water tank. Additional water requirements would be fulfilled by improvements to an existing well at the intersection of Sutter Avenue and SR 33 for construction dust control use.

During Project O&M, water would be required for suppressing fires, cleaning solar panels to maintain efficiency, conducting soil conditioning and minimal irrigation, and hydrating grazing sheep. Water required for emergency fire suppression would be stored in tanks on-site to be used as needed; the storage tanks would have a total capacity of up to 30,000 gallons, or approximately 0.09 AF. The Project's total operational water demand would be approximately 1,084 AF over 35 years. The depth to groundwater in the Pleasant Valley Subbasin ranges from approximately 350 feet below ground surface in the south to 500 feet below ground surface in the north (Pleasant Valley GSA et al. 2022). Water for employees would be bottled and brought to the site.

During decommissioning, water would be used for dust suppression and earthwork. Water facilities would be maintained in place and operational to provide water for limited use by decommissioning and site restoration workers.

2.5.2.2 Wastewater

Portable restroom facilities would be provided and serviced by licensed providers during all phases of the Project.

2.5.2.3 Stormwater

The Project may include on-site detention or retention basins that would serve to retain stormwater runoff and meet County requirements for no increase in off-site drainage to occur. For purposes of the EIR impact analysis, the following assumptions have been made regarding stormwater retention and management:

- Temporary erosion control sediment basis would be placed and maintained during construction.
- Areas of the site that would significantly increase the impervious area, such as the ESS yard, would require a permanent detention pond.
- Sediment basins and detention ponds would be located at the downstream end of the drainage area before water leaves the Project site. Such basins would be expected to remain dry except during or immediately after a rain event.

2.5.2.4 Solid Waste

Solid waste generated during construction would likely consist of cardboard, wood pallets, copper wire, scrap metal, plastic, common trash, and wood wire spools. The majority of waste generated during demolition and construction would be nonhazardous. Construction waste materials such as metal and wood would be separated from the waste stream and recycled whenever feasible. Nonrecyclable 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 registered landfill. Construction would generate an average of approximately 80 cubic yards of solid waste per week over the period of construction.

The facility is anticipated to generate limited quantities of solid waste through O&M activities consistent with typical office waste. All waste would be handled with a standard third-party waste management service. Waste generated during decommissioning and site reclamation would be similar to that described for construction activities and is expected to consist mainly of nonhazardous substances and materials. To the extent possible, materials dismantled during decommissioning would be recycled or sold as salvage.

2.5.2.5 Power

Diesel generators would be used to power handheld construction equipment. Additionally, solar or battery-powered lighting would be used, as well as electricity taken from the distribution feed during operation.

2.5.2.6 Hazardous Waste and Hazardous Materials

Project site preparation in anticipation of construction may include the application of pre-emergent herbicides formulated to minimize impacts on wildlife. The herbicides would be applied in accordance with federal, state, and county regulations, by a state-licensed pesticide applicator as described in the Integrated Pest Management Plan for the Project site (**Appendix B.1**).

Construction would generate limited amounts of hazardous wastes, such as used lubricants, cleaning solvents, and other chemicals. Additional hazardous wastes that could be encountered or released during

construction include incidentally spilled waste. Wastes generated or encountered would be handled, contained, transported, and disposed of according to federal, state, and local regulations.

Battery ESSs are equipped with several advanced containment and safety features to ensure reliability and safety. These systems typically include robust thermal management solutions to prevent overheating and thermal runaway. They are also designed with fire suppression systems, often incorporating clean agents or aerosol-based technologies to quickly extinguish fires without damaging the equipment. Additionally, battery ESS systems feature advanced battery management systems that continuously monitor the strength and performance of each cell, providing real-time diagnostics and ensuring that cells operate within safe parameters. Enclosure units are built to be fire-resistant and are often designed to vent gases safely in case of cell failure. These features, combined with stringent safety protocols and regular maintenance, contribute to the high safety standards of today's ESS systems.

Once the solar facility is no longer operational, but before equipment structure demolition, all liquids on-site would be removed. These include but are not limited to transformer oil, maintenance fuels (such as gasoline for a lawn mower), and cooling liquid (for battery units). All materials would be disposed of through a registered hazardous waste transporter as identified by the California Department of Toxic Substances Control. Batteries would also be removed and recycled to the maximum extent practicable. If the batteries are not salvageable, they would be disposed of by a universal waste handler as defined by California Code of Regulations Title 22, Chapter 23. As sections of solar arrays are removed, fencing would be demolished, removed, and hauled to the nearest landfill. Lighting and fence posts would be removed in their entirety, including buried sections. The O&M building would be emptied of all materials before the unit would be hauled off-site.

2.6 Construction

Project construction would be phased as summarized below. Construction is estimated to occur over approximately 39 months, with an expected operational start date in the first quarter of 2029. Within this time frame, construction of three Project components would occur as follows:

- **Solar Facility:** Construction of the solar facility is expected to begin in the fourth quarter of 2026 and be completed in the fourth quarter of 2029. Construction would be completed in three phases: (1) site preparation, (2) installation of the PV system, and (3) installation of the inverters, transformers, substation, switching station, and gen-tie line.
- **Energy Storage System:** Construction of the ESS is expected to begin in late 2027 and be completed in late 2028, overlapping with the solar facility. Phases would include (1) site preparation; (2) foundations, structures, and DC electrical system installation; and (3) inverter, substation, and AC electrical system installation.
- **PG&E Improvements:** Construction of the PG&E improvements is expected to begin in late 2027 and last approximately 6 months, overlapping with the solar facility and ESS. Phases of construction would include (1) site work and (2) electrical work.

2.6.1 Grading and Site Preparation

The Project site is nearly flat and has been historically graded/tilled; therefore, grading would be minimal, occurring only as necessary to level dips and rises. Site grading would also occur for new or enhanced access roads, for facilities such as the substation, switchyard, O&M building, and ESS, and for foundation areas for the inverters and transmission lines. Material import would be required for the construction of approximately 20.25 miles of access roads (approximately 10,750 cubic yards; however final totals will be adjusted during the construction permitting phase of the project). Topsoil would be preserved as much as possible, and temporary disturbance areas on the site would be revegetated with native or naturalized grasses after installation (**Appendix B.2***, Cornucopia Hybrid Project Solar Reclamation Plan*). When grading begins, topsoil would be removed and stockpiled on-site. Once grading is complete, the topsoil would be reapplied to the graded areas to assist with site vegetation and stabilization.

2.6.2 Temporary Construction Facilities and Staging Areas

Construction vehicles would access the Project site on existing private roads or new access roads off SR 33 and Sutter Avenue to deliver equipment including modules, racking system, inverters, transformers, and the ESS. The proposed laydown area is located north of the proposed substation at the southeast corner of the site (see Figure 2-3). During construction, materials would be placed within the Project site adjacent to the then-current phase of construction. See *Fencing and Security* in Section 2.5.1.4, *Other Facilities and Infrastructure*, regarding proposed security fencing and other precautions to prevent unauthorized access, theft, and vandalism.

2.6.3 Solar Facility Construction and Installation

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

- Overhead, aboveground, or underground cable.
- The racking system, which would be supported by driven steel piers (piles) directly embedded into the ground, and PV modules.
- Concrete pads or precast vaults for electrical equipment.
- Electrical equipment on skids, within shelters, or on engineered piles.
- Collection system poles and lines.
- 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.

2.6.3.1 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 before the pouring of foundations for transformers and metal structures. 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 substation would have an electrical control building, which would house substation and plant control equipment, meters, battery or generator backup, and other electrical equipment. The electrical control building would be located next to the substation.

2.6.3.2 Battery Storage System

The ESS would be connected via AC to power inverters. The inverter output would be stepped up to 34.5 kV, then combined and exported to the grid at 230 kV through the Project's substation. Specific quantities and equipment chosen for installation would depend on market conditions and the availability of commercial options and are subject to change. The ESS would be located adjacent to the 230 kV substation, and the footprint is anticipated to be up to approximately 12 acres.

The first step in the installation of a battery ESS involves the design and preparation of foundations, typically using concrete pads or piers, followed by excavation, grading, and concrete pouring with anchor bolts for secure mounting. Once the foundation is ready, the ESS enclosures are delivered and positioned using cranes or other lifting equipment. The enclosures are then securely anchored to the foundations, ensuring proper alignment and stability. Electrical connections are made to the grid and control systems are integrated, ensuring proper communication and operation. Comprehensive safety and compliance checks are conducted, including the functionality of fire suppression systems. Finally, extensive system testing and commissioning are performed to ensure that all components operate correctly and meet safety standards.

2.6.4 Construction Schedule and Workforce

Construction of the Project would occur in multiple phases and would require approximately 39 months to complete.

2.6.4.1 Hours

Construction is proposed to occur primarily during daylight hours, Monday through Friday from 6:00 a.m. to 6:00 p.m. If nighttime or weekend work is necessary, such work could be scheduled consistent with provisions of the Fresno County General Plan and County Code. If work needs to be performed outside of this period, authorization would be requested from the County in advance. Nighttime activities would be performed with temporary lighting, which would be directed downward to minimize impacts on neighboring properties and wildlife in the Project vicinity. The nighttime lighting would be powered by a diesel generator. Any work that must be performed at night would occur at or near the switchyard.

2.6.4.2 Workforce

During the approximately three-year construction time frame, the Project would employ temporary construction employees and electrical contractors. While the on-site assembly and construction workforce is expected to reach a peak of approximately 350 workers during the solar module installation phases, the average number of workers on-site is anticipated to be approximately 200–250. The construction workforce would consist of laborers, craftspeople, supervisory personnel, support personnel, and vendors. It is anticipated that this staff would reside in the Fresno Metropolitan Service Area (MSA), which

consists of Fresno and Madera counties, or the Bakersfield MSA, which consists of Kern County.[4] During decommissioning, approximately 250–300 workers would be on-site; these workers would be assumed to be from the same MSA.

Because of the remote nature of the Project, most on-site O&M activities would occur only as needed once construction is completed, on a scheduled and as-needed basis. Six permanent employees would be on staff. When this type of technical support is required, a small crew of technicians would enter the Project site during typical business hours. These individuals would be contractors or employees of the Project.

2.6.5 Construction Access, Traffic, and Equipment

Construction site access would be provided via the ingress and egress locations described in Section 2.5.1.4, *Other Facilities and Infrastructure*. Construction vehicles and equipment are expected to arrive from and depart to areas north of the Project site via I-5, West Jayne Avenue, and SR 33. Construction vehicles and equipment are expected to arrive from and depart to areas south of the Project site via I-5, SR 41, and SR 33. From SR 33, approximately 0.15 mile of Sutter Avenue could be traversed by Project construction vehicles.

Construction equipment would include the following:

- Graders and scrapers
- Excavators and trenchers
- Dumpers/tenders
- Tractors/loaders/backhoes
- Rubber-tired dozers and rollers
- Forklifts
- Cranes
- Bore/drill rigs
- Air compressors
- Diesel generator sets
- Cement and mortar mixers
- Water trucks
- Pile drivers
- Bucket trucks and aerial lifts
- Heavy-duty delivery trucks and light pickup trucks

During construction, cranes would be used for the delivery and installation of large equipment such as transformers, inverters, power poles, and the prefabricated O&M building. The only oversized delivery would be the main power transformer, which would weigh approximately 245,000 pounds. The solar modules and associated piles and frames, inverters, the main power transformer, and perimeter fencing material and prefabricated buildings would be delivered via heavy-duty trucks, with weights typical of delivery trucks. The Project may generate a maximum of 1,200 daily vehicle trips (600 round trips) between workers and deliveries of equipment during the peak phase of construction (PV array installation). Construction contractors would commute to and from the site via personal vehicles, which

[4] Consistent with Items 12 and 14 of the County's Solar Facility Guidelines, the Applicant proposes to make reasonable efforts to recruit locally and/or coordinate with employment agencies in an attempt to hire from the local workforce and to purchase products and equipment from Fresno County manufacturing facilities and/or vendors. For both purposes, *local* means the Fresno and Bakersfield MSAs, given the Project site's location in Fresno County and proximity to Kern County.

would typically consist of light pickup trucks. Consistent deliveries would not be made during the Project's operational period.

Project equipment includes the major power transformer, modules, racking system, inverters, transformers, and ESS. Substations would interconnect the Project to the grid and would commonly feature a major control enclosure. Supplies and materials necessary for construction and operation of the solar site would be stored outdoors in an on-site laydown yard or would be staged around the construction area. Equipment would be stored in a way that protects it from the elements. Spare parts would be stored in a secured enclosure on-site.

2.7 Operation and Maintenance

2.7.1 Solar Facility and Energy Storage System Operation and Maintenance

After construction, the Project would operate continuously 7 days a week throughout the year. Approximately six permanent staff members would be present as needed during normal business hours (unless otherwise required) to operate, maintain, and monitor the site. The site would also be monitored remotely 24 hours a day through the Remote-Operations Control Center. On a typical day, the number of workers on-site may range from none (it would not be necessary for staff to be present during plant operations) to 22 during periodic, routine maintenance events. Additional support personnel needed intermittently may include between 6 and 22 workers to perform maintenance activities (such as panel washing) and occasional facility repairs, as needed. Nonroutine (emergency) maintenance could require additional workers.

2.7.2 Landscaping

At start-up, the Project would include revegetation of the site with a blend of native grasses and pollinator species, avoiding species listed in the California Invasive Plant Council Inventory. In addition, the Applicant intends to include the Project as a pilot project in a study being conducted by the University of California, Davis. This study would analyze the soils on-site to select the best seed mix and monitor the potential presence of wildlife that interacts with the proposed facility.

2.7.3 Agricultural Grazing

Given the 100-year history of sheep grazing in this area, the Project would include sheep grazing throughout the site once the Project is operational. The Applicant has contracted with a local vendor to provide sheep grazing services. By grazing on the vegetation underneath and surrounding the PV arrays, the sheep would help manage on-site vegetation, reducing fire fuel loads risk and preventing vegetation from encroaching on sensitive, high-value power-generating equipment and infrastructure. Sheep grazing is also proposed to enhance and improve soil health, ecology, biodiversity, and function within the solar facility site. The sheep grazing contractor would use 1,500–2,000 sheep on the site to reduce fire fuel loads risk and dry vegetation. Approximately 20 percent of the ground cover would remain to preserve

the topsoil and to reduce dust creation and the proliferation of invasive toxic weed species. Logistics of the sheep grazing are as follows:

- Three to four semi-trucks, with 400–500 sheep in each load, would transport the sheep to the site each February or March. The same number of trucks would be used to remove the sheep from the site near the end of June or early July. This time frame would be dependent upon variables such as weather conditions and precipitation amount and patterns, and it would be subject to change annually.
- Two professionally trained sheepherders would manage and herd the sheep during the grazing season. Each herder would have at least two herding dogs and two livestock guardian dogs for each herd of sheep.
- Early in the grazing season, when the vegetation is still green, the sheep may consume 1,000–1,500 gallons of water every other day. As the days get longer and hotter and the vegetation dries out, the sheep may consume up to 2,000 gallons of water each day.

2.8 Decommissioning and Site Reclamation

Within a roughly 10- to 12-month time frame immediately preceding expiration of the Project's requested 35-year use permit (with the option to extend 5 years), 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.2, *Solar Reclamation Plan*. Simply put, the site would be returned to a condition comparable to that before construction.

Project decommissioning would consist of the removal of all aboveground structures and belowground structures that are no longer deemed necessary by the local public utility company (including foundations and infrastructure), and restoration of the site. Decommissioning operations would take approximately 10–12 months. Existing fencing, electrical power, and water facilities would be maintained in place and operational to be available for limited use by decommissioning and site restoration workers.

Decommissioning tasks would include the following actions:

- Approval of all required federal, state, and local permits.
- Installation of erosion and sediment controls.
- Removal all of liquids and batteries.
- Demolition of buildings, foundations, and fencing.
- Removal of wiring and power stations.
- Removal of PV modules and supporting structures.
- Removal of gravel roads and gravel beds.
- Placement of backfill in excavated areas.
- Seeding of disturbed areas to stabilize soils not currently used for agricultural purposes.
- Hauling of universal waste to an appropriate facility.
- Hauling and disposal of construction and demolition waste at a local landfill.

Aboveground structures such as solar PV modules, racking systems, batteries, enclosures, and fencing 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 would be removed from the site. 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 would be recycled and debris removed.

After the removal of above-grade equipment and structures, subsurface structures would be decommissioned. The underground electrical equipment would be extracted and removed from the site that are no longer deemed necessary by the public utility company, 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, would be sold for salvage value or recycled. The site reclamation process would include the removal of all Project roads, access roads, and parking areas, unless retained to support returning the site to agricultural use after decommissioning. The process generally requires removing the granular (or graveled) road base using a wheel loader to strip off the material. Dump trucks would be used to haul this debris to an approved recycling or disposal facility.

The draft reclamation plan provided in Appendix B.2 is intended to return the Project site to its pre-Project agricultural condition. Should the Project be approved, the draft reclamation plan would be updated and finalized in accordance with final, approved design plans and would be submitted with the Project's grading and building permit applications. Money in an amount equal to the estimated cost of reclamation would be placed on deposit with the County. A final reclamation plan, agreement and financial assurances would be in place before ground disturbance occurs. All roads and other areas compacted during original construction, or by equipment used for decommissioning, would be disked to aerate the soil and allow the ground to restore the subgrade material to the proper density and depth consistent with existing conditions on-site. If necessary, fresh topsoil would be imported to the reclamation site by truck and distributed where gravel roads and parking spaces would be removed. Revegetation would consist of either broadcast distribution, a return to agricultural practices, or the sowing of an appropriate mix of rangeland seed across the site, as specified by local authorities at the time of decommissioning. Weed-free temporary stabilization materials would be applied to stabilize the soil and retain moisture for seedling germination and establishment.

2.9 Applicant-Proposed Measures and Design Features

The Applicant proposes to take certain actions to reduce the potential significance of anticipated environmental impacts. These actions are elements of the Project and not mitigation measures for purposes of the California Environmental Quality Act (CEQA). If the Project is approved, the County would monitor and enforce compliance with these commitments until the obligation is satisfied. Where the analysis of individual resource impacts relies on them to reduce anticipated effects, the relevant section so notes.

2.9.1 Glare and Lighting

To reduce potential impacts on aesthetics from nighttime lighting and daytime glare, the Applicant proposes to provide the minimal amount of lighting required for safety, a security lighting system that

would be motion activated (rather than timed to remain on from dusk to dawn), and shielding or directing of lighting downward to minimize off-site impacts, including on nighttime skies.

2.9.2 Fire Protection

The Applicant would implement the following fire protection, prevention, and detection measures and design features. Fire protection systems for each Project phase would be designed in accordance with the 2022 California Fire Code (California Code of Regulations [Cal. Code Regs.] Title 24, Part 9) or the version of the Fire Code that is current at the time of construction.

To mitigate potential hazards, redundant separate methods of failure detection would be implemented as part of the ESS. Remote alarms would be installed for operations personnel and emergency response teams, including voltage, current, and temperature alarms from the battery management system. Based on selected battery manufacturer capabilities, other protective measures are proposed to include ventilation, overcurrent protection, battery controls to operate the batteries within designated parameters, temperature and humidity controls, smoke detection, and maintenance in accordance with manufacturer guidelines. In addition, an emergency response plan would be implemented as described in Section 2.9.10, *Emergency Response Plan*.

The Project's proposed fire protection design would comply with Section 1206 Electrical Energy Storage Systems, which adopts the National Fire Protection Association (NFPA) Standard for the Installation of Stationary Energy Storage Systems (NFPA 855). Depending on technology, Underwriters Laboratories (UL), an independent standards and testing agency, would certify that the batteries to be used in the Project have been manufactured in accordance with UL-9540A, an industry-standard test method for evaluating thermal runaway fire propagation in battery energy storage systems. UL independently tests equipment for compliance with the latest fire safety code requirements. This test method was developed to minimize the risk of thermal runaway to address safety concerns about battery storage equipment raised by fire departments and building officials in the United States. Compliance with these standards and certification includes a battery management system design that detects high temperatures at the battery cell or battery module level and automatically shuts down the battery rack. Furthermore, installation of battery units would follow manufacturers' specifications for the spacing of batteries and clearance distances to further prevent a thermal runaway event. Each unit would also be equipped with thermal management systems. Power to the thermal management system would be provided through a connection to the on-site station service transformer with connection lines installed above or below ground.

2.9.3 Erosion and Sediment Control and Pollution Prevention

Project activities would comply with all applicable San Joaquin Valley Air Pollution Control District rules and regulations, including Rule 9510 (Indirect Source Review) and Regulation VIII (Fugitive Dust Rules). Dust control merits further attention on the Project site because coccidioidomycosis, more commonly known as *Valley fever*, is highly endemic[5] in Fresno County. Valley fever is primarily a disease of the lungs caused by the spores of the *Coccidioides immitis* fungus. The spores naturally occur

[5] Labor Code §6709 defines *highly endemic* as meaning that the annual incidence rate of Valley fever is greater than 20 cases per 100,000 persons per year.

in soils in this region, can become airborne when the soil is disturbed, and can subsequently be inhaled into the lungs. The potential exists for both dust and spores to be stirred up during work activities that disturb the soil, such as digging, grading, or other earthmoving operations or vehicle operation on dirt roads or during high winds, and thereby to expose construction workers and others to the potential of contracting Valley fever. To reduce the potential for causing or exacerbating exposure to dust and spores, the Applicant proposes to do the following:

- Minimize soil disturbance where feasible (e.g., by limiting trenching and excavations no further than what is necessary to effectively build the Project).
- Provide effective awareness training on Valley fever to construction personnel and all other on-site personnel before they begin work (and annually thereafter) that is reasonably anticipated to cause exposure to substantial dust disturbance, where *substantial dust disturbance* means visible airborne dust for a total duration of 1 hour or more on any day.
- Use water-based dust suppression or appropriate soil stabilizers on Project roads during construction and decommissioning activities (including the O&M phase), and when vehicles are using unpaved interior accessways.
- Stabilize all spoil piles.
- Suspend outdoor work during heavy winds when fugitive dust is present.
- Keep break areas and eating areas clean and protected from sources of dust to limit potential contamination of drinks and food, where feasible.
- When feasible, use vacuums equipped with high-efficiency particulate air filters, water, wet towels, or other wet methods to clean soiled equipment, tools, and surfaces, and avoid the use of compressed air, dry sweeping, or other methods that create dust when cleaning.
- Provide personal protective respiratory equipment when exposure to dust cannot be avoided.

Other Project design features to minimize impacts on water quality include the following: No exterior wash-down areas are proposed; no on-site repair or maintenance bays or fueling areas are proposed; pest management would occur as described in Section 2.9.9, *Pest Management*; and water quality controls would be maintained on an ongoing basis and periodic inspections would be conducted to ensure proper performance.

2.9.4 Corrosion Protection

Signage, fencing, and other outdoor structures would be designed to last the life of the Project. If determined to be needed, corrosion protection would be provided by selecting thicker metal posts, using galvanized metal posts (with sacrificial anode coating), or installing a cathodic protection system (electrical corrosion controls).

2.9.5 Wildlife-Friendly Design Features

Applicant-proposed measures to reduce potential impacts on wildlife include:

- Hollow vertical tubes (e.g., solar mount poles, if used, and chain-link fencing posts) would be capped to prevent potential entrapment of birds or other small species.
- The design of new overhead transmission and communications lines and structures would follow the most recent Avian Power Line Interaction Committee guidance to reduce the potential for avian injury and mortality from collisions and electrocution.
- The proposed use of motion-activated security lighting (rather than lighting that would remain on from dusk to dawn) would reduce adverse impacts on nocturnal species.
- The bottom of the perimeter fence would have a 4- to 6-inch continuous gap (as measured from ground level) or portals (sized 4 inches by 6 inches, spaced more than 50 feet apart) around the entire perimeter to allow for wildlife passage through the solar facility.

2.9.6 Worker Environmental Awareness Training and Education Program

The Applicant would undertake a worker environmental awareness program (WEAP) for construction personnel before any activity on-site and for the duration of construction activities. All personnel in the project area (including laydown areas and/or transmission routes) would attend a WEAP developed and presented by a qualified biologist. New personnel would receive WEAP training on the first day of work and before commencing work on the site. Any employee responsible for the O&M or decommissioning of the Project facilities would also attend an O&M-specific WEAP training. The program would:

- Include information on the life history of the San Joaquin kit fox, Swainson's hawk, burrowing owl, loggerhead shrike, tricolored blackbird, American badger, San Joaquin coachwhip, Crotch's bumblebee, Temblor legless lizard, San Joaquin grasshopper mouse, Nelson's antelope squirrel, western spadefoot, and nesting birds, as well as other wildlife and plant species that may be encountered during construction activities.
- Discuss the legal protection status of each species, the definition of take under the federal Endangered Species Act and California Endangered Species Act, measures the Applicant is implementing to protect the species, reporting requirements, specific measures that each worker would employ to avoid take of wildlife species, and penalties for violation of the federal Endangered Species Act or California Endangered Species Act.
- Include the contact information for the Project biologist and on-site environmental compliance manager.
- Provide information on how and where to bring injured animals for treatment in case any animals are injured on the Project area.

An acknowledgement form signed by each worker indicating that WEAP training has been completed would be kept on record.

A sticker would be placed on hard hats indicating that the worker has completed the WEAP training. Construction workers would not be permitted to operate equipment within the construction areas unless they have attended the WEAP training and are wearing hard hats with the required sticker.

A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the WEAP training and copies of the signed acknowledgement forms would be submitted to the Fresno County Planning and Community Development Department upon the County's request.

2.9.7 Nesting Bird Preconstruction Survey and Monitoring

If construction activity is conducted outside of the breeding season (September 1 through January 31), no nesting bird mitigation would be required. If Project activities (inclusive of staging, mobilization, fence installation, grading/clearing, ground-disturbing activities, or vegetation removal) would commence during the breeding season (February 1 through August 31), and prior to final grading, a preconstruction nesting bird survey would be conducted by a qualified biologist within 7 days before the activity to survey for special-status and non-special-status bird and raptor nests. The survey area would include the Project footprint and a 100-foot buffer for passerine species, or a 300-foot buffer for raptor species. If a lapse in construction work of 15 days or longer occurs during the nesting season, additional nest surveys would be required before construction may resume. After the survey, the following would be implemented:

- A nesting bird survey report would be submitted to the County before the initiation of Project activities. The report would detail the results of the survey, including identification of the location of any active nests, and determine whether ongoing monitoring should be conducted and/or no-disturbance buffers should be established.
- If active nests are identified during the survey and/or work is scheduled to take place within 100 feet of active passerine nests or 300 feet of active raptor nests, a qualified biologist would determine appropriate no-disturbance buffers. The buffer would be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.
- A qualified biological monitor would be present at the initiation of Project activities occurring within 100 feet of active passerine nests or 300 feet of active raptor nests, to ensure that Project activities do not negatively affect the success of the nest. Duration and frequency of monitoring would be determined at the discretion of the qualified biologist.
- If nesting bird monitoring is conducted, a nesting bird monitoring report would be submitted to the County detailing the results of monitoring activities. The report would be submitted within 30 days of the completion of the activities or nesting season.

2.9.8 Preconstruction Surveys and Avoidance for Special-Status Species

Preconstruction surveys for San Joaquin kit fox, burrowing owl, and American badger would be conducted by a qualified biologist before commencement of construction activities in all areas with potential to support these species. This survey would be conducted not more than 30 days before ground-disturbing activities. The surveys would be conducted in areas of suitable habitat for each species. Surveys would conform to U.S. Fish and Wildlife Service (USFWS) guidelines for pre-activity surveys

for San Joaquin kit fox, to California Department of Fish and Wildlife (CDFW) guidelines for pre-activity surveys for burrowing owl, and to industry standards for pre-activity surveys for American badger.

Preconstruction surveys for Crotch's bumble bee, Temblor legless lizard, and Nelson's antelope squirrel would be conducted immediately before the start of (within 24 hours of) ground-disturbing activities by qualified biologists. Surveys would be focused on areas slated for immediate staging, grading, clearance, or vegetation removal. Non-protocol preconstruction wildlife surveys would also be performed within 24 hours of ground disturbance to verify the absence of habitat for special-status wildlife species within the construction footprint.

If San Joaquin kit fox or burrowing owl (assuming they have candidacy status under the California Endangered Species Act) are observed occupying the site, CDFW (for burrowing owl) or CDFW and USFWS (for San Joaquin kit fox) would be consulted. Impacts on either species would require take authorization by USFWS and/or CDFW.

If American badgers are observed occupying the site, standard avoidance buffers during breeding season, or passive eviction and burrow excavation during the non-breeding season, would be implemented. Absence protocols for this species, industry standards, and qualified biologists' expertise would inform the procedures for avoidance buffers and burrow evictions/excavations.

If any of the above-mentioned special-status species are observed as incidentally occurring on the Project site (i.e., foraging or dispersal), construction activity would not commence until individuals have exited the work area of their own volition to ensure 100 percent avoidance of direct impacts, and avoidance of handling of any state or federally listed species unless an Incidental Take Permit is obtained prior to construction.

2.9.9 Pest Management

The Applicant has prepared a draft integrated pest management plan that includes pest control measures to minimize the likelihood of pests (including weeds) within the Project site and to maximize the ability to reduce the current pest population, if present. A copy of the draft integrated pest management plan is provided in Appendix B.1, *Integrated Pest Management Plan.* It explains that the plan promotes the use of a range of preventative and nonchemical approaches to control pest populations and stave off infestation. If an infestation with unacceptable impacts occurs, thereby warranting additional treatment, then integrated pest management protocol favors the use of least-toxic pesticides. The targeted application of a toxic pesticide would be allowed only after all other reasonable nontoxic options are exhausted.

2.9.10 Emergency Response Plan

The Applicant recognizes that energy storage facilities, unless properly constructed, maintained, and operated, can create hazards for firefighters and emergency responders, with the possibility of explosions, flammable gases, toxic fumes, water-reactive materials, electrical shock, corrosives, and chemical burns. Accordingly, the Applicant proposes to construct and operate the facility in accordance with all applicable statutes, regulations, and other requirements, including by developing an emergency response plan in advance of construction to train local emergency response personnel during development and operation of the facility. The plan would be completed in accordance with existing state regulations (Health and Safety

Code §25504(b); 19 Cal. Code Regs. §2731; 22 Cal. Code Regs. §66262.34[a][4]). The contents of the emergency action plan would comply with existing state regulations, would be developed in consultation with the fire department and energy storage system supplier, and would include defined roles and responsibilities and training for local first responders.

2.9.11 Compliance with Applicable Laws and Standards

The Applicant would comply with all applicable laws and standards, which may include but would not be limited to those governing the following:

- The use, storage, and disposal of hazardous materials, specifically:
  - U.S. Department of Transportation regulations found at Code of Federal Regulations (CFR) Title 49, Part 172 (49 CFR 172) and 49 CFR 173, which include requirements for hazardous material transport licensing, packaging and containment standards, labeling, and other protection measures to prevent hazardous-materials incidents during transport and to facilitate response in the event of an incident involving hazardous materials.
  - Requirements of the California Highway Patrol, California State Fire Marshal, U.S. Environmental Protection Agency, and California Department of Toxic Substances Control. These include the requirements to submit and maintain a Hazardous Materials Business Plan and be subject to periodic inspections by the Certified Unified Program Agency (here, Fresno County's HazMat Compliance Program) for safe operations related to hazardous materials.
- Worker training and safe work practices, such as would occur under a comprehensive hazard communication program pursuant to 29 CFR 1910 to ensure that construction workers are knowledgeable in the identification and proper handling of hazardous materials to avoid spills or other upset conditions that could otherwise result in unsafe exposure.
- Air quality, such as the San Joaquin Valley Air Pollution Control District's indirect source rule and fugitive dust regulation.
- Water quality.

Compliance with these requirements would avoid or reduce potential adverse environmental impacts related to soil, air quality, surface water and groundwater quality, human health, fire-related risk, and other environmental considerations.

2.9.12 Storm Water Pollution Prevention Plan

Project construction would disturb more than 1 acre of soil. As a result, the Applicant would prepare, file, and implement a storm water pollution prevention plan (SWPPP) in accordance with the State of California's General Permit for Stormwater Discharges Associated with Construction Activities (2022-0057-DWQ). The SWPPP would include measures to limit erosion and off-site transport of pollutants from construction activities. The plan would designate best management practices that would be followed during construction to help stabilize disturbed areas and reduce erosion, sedimentation, and pollutant transport.

2.10 PG&E Infrastructure

To accommodate the Project, PG&E would construct a switching station in the southeast corner of the Project site (see Figure 2-3), located directly adjacent to the Project substation. The switching station footprint would be up to approximately 2 acres. The substation would connect to PG&E's high-voltage 230 kV switching station by a new gen-tie line, which may be up to 200 feet in length. The 230 kV switching station would then connect to PG&E's existing 230 kV transmission lines located directly adjacent to the switching station. No poles for the gen-tie route are expected other than the take-off structures that would be located inside the switchyard and substation (two total). One additional pole may be required for the gen-tie route in the unlikely event that PG&E changes the configuration of its switchyard.

2.11 Permits and Approvals

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

- **Fresno County, Department of Public Works and Planning:** Unclassified CUP to allow development and construction of a hybrid solar energy generation and energy storage facility on lands within an AE-20 and AE-40 zone district;[6] Variance to allow for reduction in front- and side-yard setbacks on parcel boundaries internal to the Project site; Construction, grading, building, and encroachment permits; Williamson Act contract cancellation.
- **Central Valley Regional Water Quality Control Board:** Notice of Intent to comply with the National Pollutant Discharge Elimination System General Permit for Stormwater Discharge Associated with Construction Activity if construction activities implicate waters of the United States.
- **California Department of Transportation:** 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).
- **California Public Utilities Commission:** Authorizations pursuant to General Order 131-E for the PG&E infrastructure.
- **PG&E:** Utility easement or encroachment agreement, as applicable.

[6] The County processes PV solar facility projects through the CUP process for public utility and public services, structures, uses and buildings, as described in Fresno County Zoning Ordinance §853.B.14 (Fresno County 2024c). By contrast, County Zoning Ordinance Code §816.2.D identifies electrical transmission substations and electric distribution substations as uses permitted subject to director review and approval (Fresno County 2024c). 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. Because the CUP process is more intensive than the Director Review and Approval 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 director review and approval.

2.12 References

DOC (California Department of Conservation). 2024. California Important Farmland Finder. Available: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed February 2024.

Fresno County. 2017. County of Fresno Solar Facility Guidelines. Revised by Board of Supervisors on December 12, 2017. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities/photovoltaic-facilities-p-1621. Accessed July 1, 2024.

Fresno County. 2024a. Parcel Maps. Available: https://www.fresnocountyca.gov/Departments/Assessor/Parcel-Maps. Accessed June 26, 2024.

Fresno County. 2024b. Assessed Value Lookup. Available: https://www.fresnocountyca.gov/Departments/Assessor/Value. Accessed June 26, 2024.

Fresno County. 2024c. 2024 Fresno County General Plan Policy Document. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed: August 18, 2024.

Fresno County. 2024d. County of Fresno—Zoning Interactive Map. Available: https://gisportal.co.fresno.ca.us/portal/apps/webappviewer/index.html?id=b921843d343d4df998b5b3c6a301756a. Accessed April 1, 2024.

Pleasant Valley GSA (Pleasant Valley Groundwater Sustainability Agency). 2022, *Pleasant Valley Groundwater Sustainability Plan.* Prepared with Provost & Pritchard Consulting Group and Kenneth D. Schmidt and Associates. February 22, 2022. Available: https://sgma.pleasantvalleywaterdistrict.com/. Accessed August 21, 2024.

Rincon Consultants, Inc. 2024. *Cornucopia Hybrid Project Water Supply Assessment*. June 2024.

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CHAPTER 3
Environmental Analysis

3.1 Introduction to Environmental Analysis

3.1.1 Overview

This chapter describes and analyzes the direct, indirect, and cumulative environmental impacts of the Cornucopia Hybrid Project (Project) as they relate to each resource consideration identified in the environmental checklist in California Environmental Quality Act (CEQA) Guidelines Appendix G. Those resource considerations consist of 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. The potential environmental impacts of alternatives to the Project are analyzed and compared to Project impacts in Chapter 4, *Comparison of Project and Alternatives*.

3.1.2 Environmental Assessment Methodology

3.1.2.1 Environmental Baseline

The analysis of each issue area begins with a description of the actual physical environmental conditions in the 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 May 2024 when the Notice of Preparation was published, unless otherwise noted. The Notice of Preparation 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 that are attributable to Project components or activities. Consistent with CEQA, an environmental impact report (EIR) need not analyze the effects of the existing environment on a project (including its users or occupants) unless the project would exacerbate those conditions.

3.1.2.2 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 (County), as the lead agency for this Project, 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.

3.1.2.3 Impact Significance Conclusions

This EIR evaluates whether the Project or alternatives would cause a change in the environment. The 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:** The 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:** The 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:** The Project or an alternative could cause an adverse change in the environment that would be substantial relative to the applicable significance threshold, but 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:** The 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:** 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.

Mitigation Measures

CEQA Guidelines §15370 defines *mitigation* to include the following:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

e) Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.

The County has developed mitigation measures to avoid or reduce potentially significant adverse environmental effects of the Project. The full text of the mitigation measures is provided in the individual resource sections throughout this chapter. The EIR evaluates the effectiveness of recommended mitigation measures 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.

3.1.2.4 Pacific Gas and Electric Company Infrastructure

As explained in Chapter 2, *Project Description*, and Section 3.12, *Land Use and Planning*, the California Public Utilities Commission (CPUC) has regulatory oversight authority over Pacific Gas and Electric Company (PG&E) and the potential environmental consequences of PG&E's proposed activities. See Section 2.11, *Permits and Approvals,* and Section 3.12.1.3, *Regulatory Setting*. Therefore, 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 could apply to the PG&E interconnection infrastructure as to the Project proposed by Cornucopia Hybrid, LLC (Applicant).

3.1.3 Cumulative Effects Approach

3.1.3.1 Cumulative Scenario

The term *cumulative scenario* is used in this EIR to refer to the projections and 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 3.1-1**, *Cumulative Projects List*, and their locations are shown in **Figure 3.1-1**, *Cumulative Projects*. Although the list of projects is based on a 15-mile radius of the Project site, the geographic area of cumulative consideration is established on a resource-by-resource basis throughout Chapter 3 as dictated by relevant physical boundaries (such as the extent of the air basin) and is not limited by the area shown in Figure 3.1-1.

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 analyses that have been adopted or certified, such as the Fresno County General Plan and the San Joaquin Valley Air Pollution Control District's 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.

TABLE 3.1-1
CUMULATIVE PROJECTS LIST

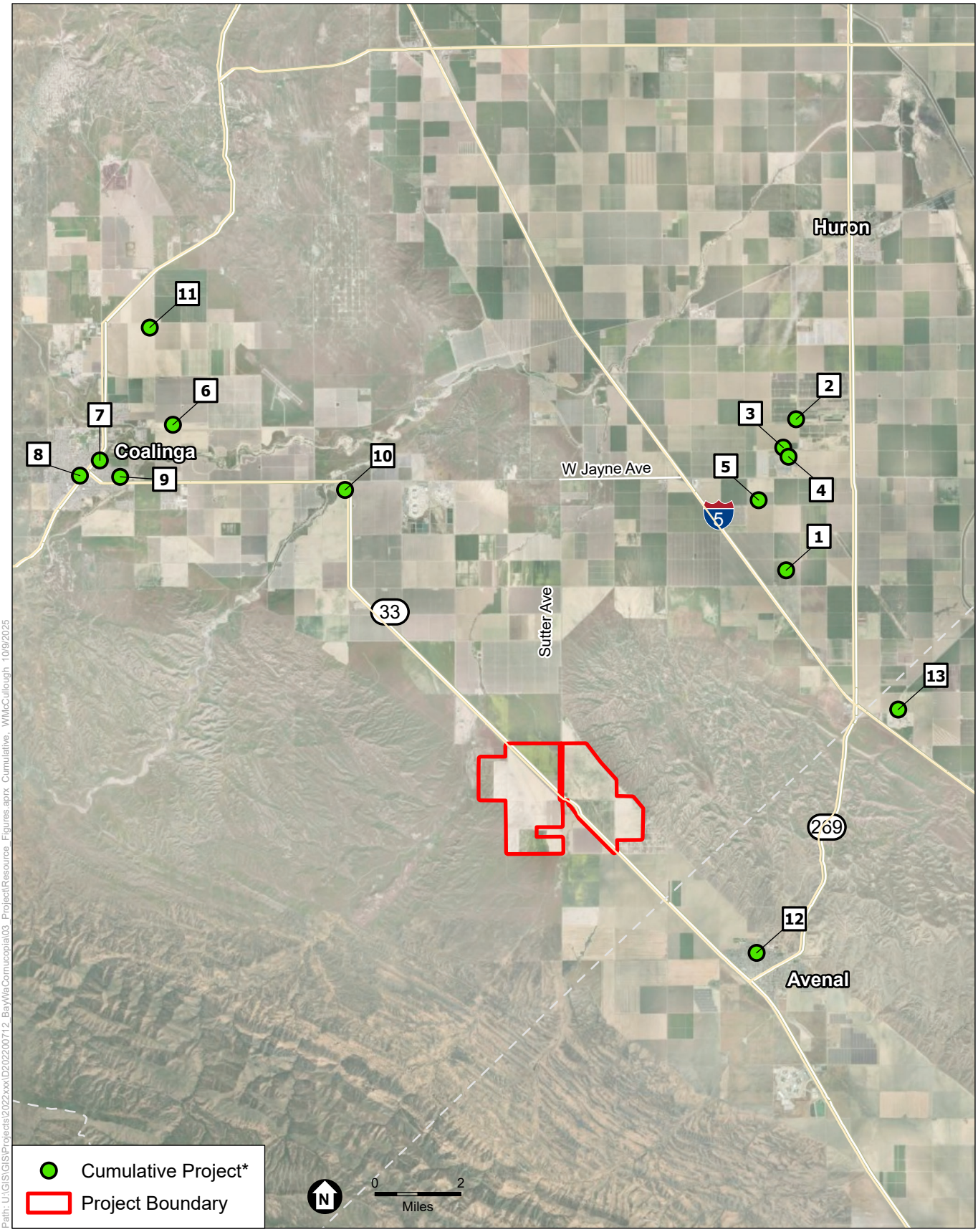
Figure Number	Project Name/Applicant	Location	Approximate Distance from Project Site	Description	Status
	Past Projects				
1	CUP 3294/Westlands Solar Farms LLC	South side of West Jayne Avenue between I-5 and SR 269	5 miles northeast	A 20 MW solar PV power generation facility with related infrastructure on 90.5 acres.	Approved in 2011; constructed before June 2024 (Google Earth Pro 2024a)
2	Fifth Standard Solar Project/RWE Solar Development, LLC	Unincorporated Fresno County, approximately 2 miles east of I-5 and approximately 13 miles east of Coalinga. SR 269 borders the eastern side of the property and is the only paved road adjacent to the project site. Trinity Avenue, Tractor Avenue, and Phelps Avenue intersect the project site, but are not improved roads.	6 miles northeast	A 150 MW solar PV power generation facility, an up to 100 MW energy storage facility, and a gen-tie line to connect the solar and storage components of the proposed project to PG&E's adjacent Gates Substation (point of interconnect).	Final EIR published October 2020; construction completed in 2023 (Fresno County 2020)
3	Gates 500kV Dynamic Reactive Support Project	20-acre undeveloped site located in Fresno County, California, approximately 1 mile northwest of the intersection of SR 269 and West Jayne Avenue, approximately 3.3 miles southwest of the city of Huron.	6 miles northeast	Construction of the Orchard Substation containing two STATCOM units (devices used to regulate voltages for transmission networks and assist in ensuring reliable operation of transmissions systems near a substation) and ancillary components immediately north of and independently connected to the existing PG&E Gates Substation. Connection to the PG&E Gates Substation would require PG&E to construct and operate two single-circuit 500 kV interconnection transmission lines from the Gates Substation 500 kV bus to the Orchard Substation 500 kV take-off towers.	Construction complete and substation energized in March 2025.
4	PG&E (Bank 11 Replacement-—230 kV Bus E Breaker-and-a-half Conversion 500/230 kV–Substation)	East of South Lake Avenue, west of South Trinity Avenue, and north of West Jayne Avenue within the existing PG&E Gates Substation property.	6 miles northeast	Replacement of bank and conversion of the existing 230 kV double bus section E inside the existing PG&E Gates Substation.	Planned in-service 2023 (PG&E 2022)

Figure Number	Project Name/Applicant	Location	Approximate Distance from Project Site	Description	Status
	Other Present or Reasonably Foreseeable Future Projects				
5	Key Energy Storage Project/ Key Energy Storage, LLC	4 miles southwest of the city of Huron, between I-5 and SR 269, and adjacent to PG&E's existing Gates Substation.	6 miles northeast	Battery storage (using lithium-ion and/or iron-flow storage technology) facility on approximately 260 acres, with associated on-site support facilities, connecting to the regional electric transmission system at the existing PG&E Gates Substation.	Final EIR published in June 2024; approved in October 2024 (CEQAnet, 2024)
6	CUP 3610/ForeFront Power	West of South San Mateo Avenue between Phelps Avenue and Gale Avenue.	8.5 miles northwest	A 1 MW solar PV power generation facility with related improvements on an approximately 11.5-acre portion of a 53.81-acre parcel.	Approved by Planning Commission on December 16, 2021; construction not started as of May 2024 (Google Earth Pro 2024b)
7	City of Coalinga Trails Master Plan Segments 3, 4, and 9/City of Coalinga	City of Coalinga.	9 miles northwest	Design, construction, and operation of portions of three segments—Segments 3, 4, and 9—of the City of Coalinga's planned 8.8-mile perimeter trail and spur system identified in Coalinga's Trails Master Plan, totaling approximately 4,600 linear feet (0.87 mile) of a multi-use (vehicle-separated) loop-and-spur Class I bicycle/pedestrian trail.	CEQA review completed in 2021; design is complete; construction anticipated in 2025–2026 (City of Coalinga 2021, 2024)
8	City of Coalinga Trails Master Plan Segments 1, 2, 13, and 14/City of Coalinga	City of Coalinga.	9 miles northwest	Design, construction, and operation of four segments of the City of Coalinga's planned 8.8-mile perimeter trail and spur system identified in Coalinga's Trails Master Plan, totaling approximately 10,520 linear feet (1.97 miles) of a multi-use (vehicle-separated) loop-and-spur Class I bicycle/pedestrian trail.	CEQA review completed in 2022; construction anticipated in 2025–2026 (City of Coalinga 2022, 2024)
9	150 South Hachman Street Subdivision Project/Paramjit Singh Mond Fair Find Enterprises, LLC	150 South Hachman Street, Coalinga.	9 miles northwest	Subdivision of the parcel into five 5,000 sf parcels for future residential development.	IS/MND published April 20, 2020 (City of Coalinga 2020)
10	State Route 33 Pavement Rehab/Caltrans District 6	Along SR 33 from Merced Avenue to the Los Gatos Creek South Channel Bridge between post miles 14.7 and 16.7 in the city of Coalinga.	9 miles northwest	Proposal by Caltrans to restore the pavement along SR 33 from Merced Avenue to the Los Gatos Creek South Channel Bridge between post miles 14.7 and 16.7 in the city of Coalinga in Fresno County.	CEQA review completed in 2022; construction began in late 2024 and estimated to be complete by September 2025 (Caltrans 2024)

Figure Number	Project Name/Applicant	Location	Approximate Distance from Project Site	Description	Status
11	CUP 3607/ForeFront Power	Approximately 0.2 mile east of Shell Road, 0.4 mile northeast of its intersection with Oil City Road, and 2.6 miles north of the nearest city limits of the city of Coalinga.	13 miles northwest	A 5 MW solar PV power generation facility with related improvements on an approximately 47-acre portion of an 88.23-acre parcel.	CUP approved by Fresno County in July 2019; permit time extension through August 2023 issued; construction not started as of May 2024 (Google Earth Pro 2024c)
12	12,200 sf Grocery Store	316 East Kings Street, Avenal.	3.5 miles southeast	Commercial/non-residential.	Planning entitlement application in process (George, pers. comm., 2024)
13	EV Fast Charging Station with 3,000 kg/day production of hydrogen; 3,000 sf building and 26 parking spaces	Adjacent to I-5 at 35010 Plymouth Avenue, Avenal.	5 miles east	Commercial/non-residential.	Planning entitlement application in process (George, pers. comm., 2024)
14	Darden Clean Energy Project	South of Cantua Creek in W. Fresno County; between South Sonoma Avenue to the west and South Butte Avenue to the east	Approximately 30 miles north of the Project	Solar and battery storage, grid step up station on 9,500 acres; 15 mile 500kV gen tie line and PG&E owned 500 kv switchyard along the Los Banos Midway #2 500 kV TL.	Draft EIR released for public review Feb. 2025.
15	Valley Clean Infrastructure Plan/ Golden State Clean Energy	Westlands Water District boundary within Fresno and Kings County between just west of I-5 (to the west) and	Master plan overlaps Project area	Master plan for solar generation, energy storage, and electrical transmission on 130,000 acres in western Fresno County and Central San Joaquin Valley	Draft EIR released for public review Feb. 2024.

Notes: Caltrans = California Department of Transportation; CEQA = California Environmental Quality Act; CUP = conditional use permit; EIR = environmental impact report; EV = electric vehicle; gen-tie = generation-tie; I-5 = Interstate 5; IS/MND = initial study/mitigated negative declaration; kg/day = kilograms per day; kV = kilovolt(s); MND = mitigated negative declaration; MW = megawatts; PG&E = Pacific Gas and Electric Company; PV = photovoltaic; sf = square feet; SR = State Route; STATCOM = static synchronous compensator

Source: Data compiled by Environmental Science Associates in 2024



Path: U:\GIS\GIS\Projects\2022xxx\D202200712_BayWaComucopia\03_Project\Resource_Figures.aprx Cumulative_WMcCullough 10/9/2025

Source: ESA, 2024

* For full list of cumulative projects see Table 3.1-1.
Cumulative Projects #14 and #15 are not depicted on this figure.

Cornucopia Hybrid Project

Figure 3.1-1
Cumulative Projects

ESA

3.1.3.2 Cumulative Impacts Analysis

Incremental Project impacts resulting from initial site preparation and construction, operation and maintenance, and decommissioning and site reclamation could combine with the incremental impacts of other projects to cause or contribute to cumulative effects. Direct and indirect effects of the Project are analyzed on a resource-by-resource basis throughout Chapter 3; a comparative analysis of the cumulative impacts of the alternatives is provided in Chapter 4, *Alternatives*. Where the Project or an alternative would cause no impact on a given resource, it could not cause or contribute to any cumulative impact on that resource. See, e.g., Section 3.17, *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 scope of the cumulative impacts reflect a combination of the natural condition and the ongoing effects of past actions in the affected area.

3.1.4 References

Caltrans (California Department of Transportation). 2024. "State Route 33 Pavement Rehabilitation Project." Available: https://dot.ca.gov/caltrans-near-me/district-6/district-6-projects/06-0x290. Accessed November 25, 2024.

CEQAnet. 2024. Search Results: "Coalinga." Available: https://ceqanet.opr.ca.gov/Search?City=Coalinga. Accessed November 25, 2024.

City of Coalinga. 2020. *Initial Study/Mitigated Negative Declaration, 150 South Hachman Street Subdivision Project.* Coalinga, CA. Prepared by Raney Planning & Management, Inc., Sacramento, CA. April 2020. Available: https://ceqanet.opr.ca.gov/2020040223/2/Attachment/rB-KWh. Accessed November 25, 2024.

City of Coalinga. 2021. *Initial Study/Mitigated Negative Declaration for the City of Coalinga Trails Master Plan Segments 3, 4, and 9, Coalinga, Fresno County, California*. Coalinga, CA. Prepared by SWCA Environmental Consultants. September 2021. Available: https://files.ceqanet.opr.ca.gov/272742-1/attachment/We5LxMujH52Y1ePN5Vn1pRu-9c64AkaKFtcfTidANo-1T0Y0ZM2kPUu3Z2GhOGxx4dwXqoC7vVaowa7z0. Accessed November 25, 2024.

City of Coalinga. 2022. *Initial Study/Mitigated Negative Declaration for the City of Coalinga Trails Master Plan Segments 1, 2, 13, and 14, Coalinga, Fresno County, California.* Coalinga, CA. Prepared by SWCA Environmental Consultants. October 2022. Available: https://files.ceqanet.opr.ca.gov/282543-1/attachment/O400GfkVMWblXIPdKnvtkgRnGKjAIeK2Fj2se0RtRBIwlDIiyHY7uoNABYb0RgDXJQsgq9EIMBqrfQK80. Accessed November 25, 2024.

City of Coalinga. 2024. City Manager Updates Council on Master Trails Projects: Presentation by Interim City Manager to City Council on October 3, 2024. Available: https://www.coalinga.com/DocumentCenter/View/2323/Trails-Presentation-10-3-2024. Accessed November 25, 2024.

CPUC (California Public Utilities Commission). 2022. *LS Power Grid California, LLC, Gates 500kV Dynamic Reactive Support Project, Final Initial Study Mitigated Negative Declaration.* State Clearinghouse No. 2022040457. Prepared by Environmental Science Associates. July 2022. Available: https://ia.cpuc.ca.gov/environment/info/esa/gates/pdfs/Gates_500kV_Final_ISMND_July_2022.pdf. Accessed November 25, 2024.

Fresno County. 2020. *Fifth Standard Solar Project Complex Final Environmental Impact Report.* No. 7257. State Clearinghouse No. 2017091038. Department of Public Works and Planning, Development Services and Capital Projects Division, Fresno, CA. Prepared by Stantec Consulting Services Inc., Fresno, CA. October 2020. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/50203-fifth-standard-solar-final-eir-7257.pdf. Accessed November 25, 2024.

George, Kelsey. 2024. Email correspondence from Kelsey George, Senior Planner for the City of Avenal, to Ryan Carew, Planner with Environmental Science Associates, regarding cumulative projects within the City of Avenal, California. June 26, 2024.

Google Earth Pro. 2024a. Coordinates: 36°07′43.24″N, 120°07′54.07″W. Imagery date June 18, 2024. Accessed November 24, 2024.

Google Earth Pro. 2024b. Coordinates: 36°09′05.84″N, 120°19′14.72″W. Imagery date September 18, 2024. Accessed May 14, 2025.

Google Earth Pro. 2024c. Coordinates: 36°13′11.71″N, 120°20′48.29″W. Imagery date May 18, 2024. Accessed May 14, 2025.

PG&E (Pacific Gas and Electric Company). 2022. Transmission Development Forum: Generation Interconnection Project Upgrades and Transmission Planning Process Upgrade Status. April 26, 2022. Available: https://www.caiso.com/documents/pgepresentation-transmissiondevelopmentforum-apr262022.pdf. Accessed November 27, 2024.

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3.2 Aesthetics

This section identifies and evaluates issues related to aesthetics, including scenic vistas; scenic resources; the visual character and quality of views of the site and its surroundings from publicly accessible vantage points; and light and glare and their impacts on daytime or nighttime views in the area. 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. The County did not receive any scoping comments regarding aesthetics (**Appendix A**, *Scoping Report*).

This analysis is based in part on the visual resources technical report prepared for the Project (**Appendix C**, *Visual Resources Technical Report*). The preparers of this Draft EIR independently reviewed the visual resources technical report (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.

3.2.1 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.
- *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.
- Duration of view.

Viewer types and volumes of use pertain to the types of use (e.g., public viewers including recreationists and motorists) 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. Visual sensitivity is characteristically more pronounced in areas of more distinctive visual quality, such as designated scenic highways, designated scenic roads, parks, and recreation and natural areas. 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 low, moderate, and high visual sensitivity ranges.

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

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.

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

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

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 is a measure of the degree to which a project's features would obstruct or block views of aesthetic features due to its relative position and/or scale.

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, four KOPs were used to construct a visual simulation of pre-development and post-development views of the Project site. **Figure 3.2-1**, *Key Observation Points*, depicts the locations of the selected viewpoints and the directions of view with respect to the Project site and vicinity. Additional details about the selection of these specific viewpoints and their use in the analysis are provided in Section 3.2.4.1.

3.2.2 Setting

Fresno County contains diverse landscapes including open farmland, grasslands, and views of the Sierra Nevada. Fresno County is located within the central San Joaquin Valley of California. The Project site is located in the Coast Ranges and in the Westside Valley agricultural area as defined in the Fresno County General Plan.

3.2.2.1 Study Area

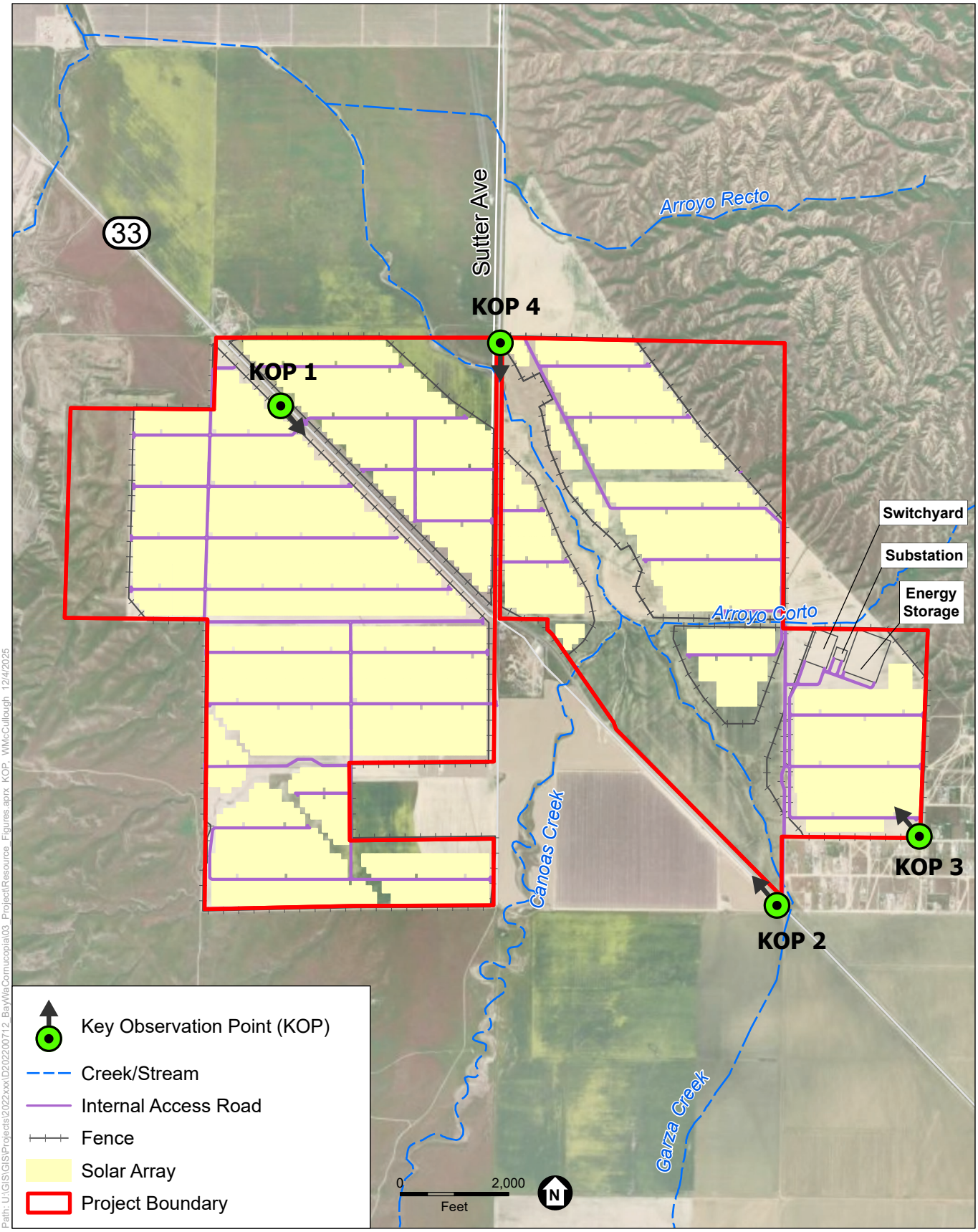
The study area for this analysis of potential impacts on aesthetics includes the Project site and all land and roadways within 3 miles of the Project boundary as shown in Figure 3.2-1. Because the study area is relatively flat, 3 miles was determined to be a reasonable distance wherein the Project would be visible. Beyond that distance, structures tend to visually recede into the background.

3.2.2.2 Environmental Setting

Environmental conditions in the study area as discussed in this section include the regional and local characteristics of the area; existing sources of light and glare; sensitive visual receptors; visual quality of the study area; and the KOPs from which the Project would be visible, to determine existing conditions with respect to visual resources.

Regional Character

The Project site occupies agricultural land in southwestern Fresno County. A major north-south transportation route in the vicinity is State Route (SR) 33, which bisects the Project footprint in a northwest-to-southeast direction. The Project site is in the Westside Valley area, a smaller agricultural valley connected to the Central Valley by a gap in the Coast Ranges and southern Diablo Range foothills, which visually frame the Westside Valley. On a broad scale, the Westside Valley shares visual characteristics similar to the Central Valley, including expanses of agricultural lands trending northwest to southeast. The Project site is visually framed by elevated ranges of regional foothills including the Guijjaral Hills (east of Coalinga) to the north, Chalk Buttes to the south, the northern extent of the Kettleman Hills to the east, and the Kreyenhagen Hills to the west.



Source: ESA, 2024

Cornucopia Hybrid Project

Figure 3.2-1
Key Observation Points

ESA

Local Character

The Project vicinity consists of flat terrain that is zoned for agricultural and residential use. The primary land uses surrounding the site are rural residential to the southeast, with the remainder being agricultural grasslands, orchards, and scattered rural residential. The topography is relatively flat, with open expansive views of distant hills and mountains framing the valley. The built environment includes low wooden post and wire fences, as well as dirt and paved roads extending from SR 33. There are several transmission lines supported by tall steel lattice towers aligned from east to west in the vicinity. Local electrical distribution lines supported by wooden poles connecting to the community of Lost Hills (at the southeastern edge of the site) are also present in the Project vicinity. Under existing conditions, seasonal grazing by sheep occurs across various parts of the Project site or in the vicinity.

Visual Character and Quality of Public Views

Representative photos of the Project site are provided to depict the existing visual character and quality of the Project site and surroundings as viewed from KOPs. These KOPs were selected as representative public visual perspectives as seen by motorists or residents along public roadways, the main viewer group in the study area. **Figures 3.2-2** through **3.2-5** provide representative existing views from each of the four KOPs selected for the Project's analysis of visual effects. A description of the visual characteristics of each KOP follows.

KOP 1

The view at KOP 1 represents that seen by motorists traveling southeast on SR 33 at the northern extent of the Project site. Motorists would be the primary viewer group at this KOP. The viewing experience for motorists would be fleeting and generally limited based on speed of travel. As depicted in Figure 3.2-2, the southbound view is open and expansive with green grassland vegetation in winter and spring months, and tawny grass in the agricultural fields in summer and fall. The foothills of Kettleman Hills frame the view with vertical low fence posts and wooden power distribution poles aligned along the roadway. Steel lattice towers appear as light gray structural elements in the background.

KOP 2

Motorists traveling northwest along SR 33 would have fleeting views of some of these same features at KOP 2, as depicted in Figure 3.2-3. Motorists would be the primary viewer group at this KOP. Evident in the middle ground view from this view are electrical transmission lines crossing over the roadway and the supporting towers on either side of the roadway. Low wooden fence posts can be seen along the route, with an orchard extending out toward the western foothills. Agricultural structures are seen in the center of the representative view. Agricultural fields can be seen to the east and green and blue hues shape the foothills beyond the distant mountains in the background view. The agricultural field would be covered in green vegetation in winter and spring months, and tawny vegetation in the summer and fall. Residences in the Lost Hills neighborhood are directly east of this KOP.



2022/D20220071 2.00 - BayWa Cornucopia Solar Project/05 Graphics-GIS-Modeling-USE AZURE/Illustrator

SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-2
Representative View from KOP 1

ESA



2022/D20220071 2.00 - BayWa Cornucopia Solar Project/05 Graphics-GIS-Modeling-USE AZURE/Illustrator

SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-3
Representative View from KOP 2

ESA



2022/D20220071 2.00 - BayWa Cornucopia Solar Project/05 Graphics-GIS-Modeling-USE AZURE/Illustrator

SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-4
Representative View from KOP 3

ESA



2022/D20220071 2.00 - BayWa Cornucopia Solar Project/05 Graphics-GIS-Modeling-USE AZURE/Illustrator

SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-5
Representative View from KOP 4

ESA

KOP 3

The representative public view at KOP 3 is from the Lost Hills neighborhood along the southern edge of the Project site. As shown in Figure 3.2-4, community residents would be the primary viewer group at this KOP. Views looking northwest from the northern edge of the Lost Hills community display green agricultural fields through a post and wire fence in the foreground; foothills and power transmission lines in middle ground view; and distant residential structures against the mountains in the background. The agricultural field would be covered in green vegetation in winter and spring months, and tawny vegetation in the summer and fall.

KOP 4

Looking south along Sutter Avenue, motorists at KOP 4 view an open agricultural field, a seasonal creek, and a dirt road turnout to the west in the foreground view (Figure 3.2-5). The agricultural field would be covered in green vegetation in winter and spring months, and tawny vegetation in the summer and fall. A few built structures can be seen from this view, including vertical power poles aligned along the roadway extending into the distance. The southern extent of Diablo Mountain range frames the open view along the horizon in the background view.

Lighting Environment

There is minimal artificial lighting in the vicinity of the Project site, due to its remote rural location. Existing lights from residences in the Lost Hills community, vehicle lights along SR 33 and local roads, and agricultural equipment contribute to the existing lighting environment.

Viewer Types and Exposures

Potential public viewer groups evaluated for this analysis include motorists along SR 33 and other local roadways and local residents with open, public views of the site. For each viewer group analyzed, viewer exposure conditions were evaluated based on traffic flow information along local roadways, as described in Section 3.18, *Transportation*.

With regard to viewer exposure, 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 such views would be open or panoramic, or limited by intervening vegetation, structures, or terrain. Duration of view refers to the amount of time the Project typically would be seen from a sensitive viewpoint. In general, the 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.

State Scenic Highways and Major Roads

There are no state-designated or eligible highways near the Project site. SR 180 (from the eastern edge of the city 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 highway segments that are potentially eligible for future designation as State Scenic Highways, Eligible State Scenic highways within 20 miles of the

Project site include a portion of SR 41 (approximately 12 miles to the south); portions of SR 198 and SR 33 near Coalinga/Oilfields (6 miles to the north); and Interstate 5 (I-5) (Caltrans 2021). The Project site is not visible from any of these designated or eligible State Scenic Routes.

Parks and Recreational Areas

Recreational users are generally determined to be the viewers most sensitive to visual impacts. As noted in Section 3.17, *Recreation*, there are no established parks or recreational facilities within view of or near the Project site. The closest recreational areas to the Project site are the Floyd D. Rice and Avenal Neighborhood parks within the city of Avenal, located approximately 3.5 miles from the Project site.

Scenic Vistas

There are no County General Plan–designated scenic vistas in the Project vicinity. Additionally, Google Earth was used to search for any other designated 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.

3.2.2.3 Regulatory Setting

Federal

There are no federal regulations pertaining to visual resources in the Project vicinity.

State

California Department of Transportation State Scenic Highways Program

California's Scenic Highway Program, administered by the California Department of Transportation (Caltrans), was created by the Legislature in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic quality of lands adjacent to highways. The State Scenic Highway System includes highways that either are eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway shifts from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation. Local jurisdictions may propose adding routes with outstanding scenic elements to the list of eligible highways; however, state legislation is required for the routes to become officially designated. There are no eligible or designated state scenic highways in the vicinity of the Project.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County Designated Scenic Highways

The County has designated a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. Landscaped drives are roads bordered by mature and consistent landscaping with an area-wide significance. The closest Fresno County designated scenic highway segments are SR 198 from

I-5 to the Monterey County line, excluding the city of Coalinga, and I-5 within Fresno County (Fresno County 2024). I-5 is approximately 4.5 miles east of the Project site and separated visually by the intervening Kettleman Hills.

Fresno County General Plan

Numerous elements of the Fresno County General Plan incorporate scenic and visual considerations (Fresno County 2024). The following goals and policies in the Land Use, Public Facilities, and Services and Open Space and Conservation elements pertain specifically to scenic and visual resources.

Goal LU-B: To preserve the unique character of the Westside Rangelands, which includes distinctive geologic and topographic landforms, watersheds, important agricultural activities, and significant biological resources, while accommodating agriculture, grazing, recreation, resource recovery, and other limited uses that recognize the sensitive character of the area.

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.2: The County shall manage designated landscaped drives and adjacent land based on the following principles:

a. Maintenance and improvement of landscaped drives should be directed toward preserving and enhancing the quality of the landscape within the right-of-way. Where deemed necessary or desirable, the Board of Supervisors should, by resolution, assume responsibility for maintenance and improvement of landscaped drives.

b. Development of land adjoining landscaped drives should be planned and designed to preserve the quality and integrity of the roadside landscape.

Policy OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

a. Timber harvesting within or adjacent to the right-of-way shall be limited to that which is necessary to maintain and enhance the quality of the forest.

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.

PF-J.2 Gas and Electric Systems. The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

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

OS-K.1 Scenic Resource Preservation. 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.

OS-K.4: Incorporating Scenic Features. 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.

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

OS-K.1 Scenic Roadway System. The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways.

3.2.3 Significance Criteria

The Project would result in a significant impact on aesthetics if it would do any of the following:

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) Substantially degrade the existing visual character or quality of public views of the site and its surroundings.

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

3.2.4 Direct and Indirect Effects

3.2.4.1 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 on 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 place or becomes 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, as defined below. **Table 3.2-1**, *Framework for Determining Adverse Visual Impact Significance*, shows the framework that was used in this analysis for determining the overall visual sensitivity, visual change, and any impact significance.

Overall Adverse Visual Impact

The potential for adverse visual impacts includes the overall visual changes to the directly affected landscape and considers visual sensitivity from sensitive viewing locations, as evaluated using the qualitative framework provided (see Table 3.2-1).

TABLE 3.2-1
FRAMEWORK 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.

3.2.4.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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

The Project would not be located in view of any scenic vistas. There are no designated or other 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.

The Project site does not contain any natural scenic resources or historic structures and is not located within view of any designated or eligible state scenic highways. Therefore, construction, operation, maintenance, and decommissioning of the solar facility and energy storage system (ESS) would have no impact on these visual resources. (*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.

Public views of the Project site and surroundings would be available along SR 33 and through local roadways, most notably Sutter Avenue, and to the community of Lost Hills. Under existing conditions, open views of surrounding agricultural land dominate foreground views, the Kettleman Hills are seen in middle ground views, and views of the Diablo Range and Coast Ranges are available in the background. Existing power lines and sparse development (structures and residences) can be seen from several perspectives in the viewshed. Representative views of the site and surroundings at four KOPs are depicted in Figures 4.2-2 through 4.2-5.

Impact 3.2-1 The Project could substantially degrade the existing visual character or quality of public views of the site and its surroundings during construction or operation. (*Less-Than-Significant Impact*)

Construction and Decommissioning

Construction and decommissioning would entail the presence and use of vehicles and equipment, such as graders, excavators, cranes, and drill rigs, among others described in Section 2.6.5 and noted in the Project Reclamation Plan (**Appendix B.2**). Materials would also be placed in staging and laydown areas during the construction phase. It is estimated that 39months would be required to complete Project construction. Decommissioning could take a similar amount of time.

Under existing conditions, the site consists of agricultural land with few structures and relatively unobstructed open views, which is ubiquitous in the study area. During construction, vehicle deliveries, along with the presence and use of materials and equipment associated with construction of the Project would change the visual character of the site. The addition of newly constructed features such as perimeter fences and solar arrays, to the extent that such components are erected during construction, would introduce new structures into the visual landscape. However, as noted in the environmental setting, views of the site and surroundings include those of other structures such as agricultural buildings and transmission lines under existing conditions.

Overall visual sensitivity of motorists traveling along SR 33 or along local roads such as Sutter Avenue near the Project site would be considered low to moderate as the duration of view would be brief for motorists traveling on these roadways. Public views from the Lost Hills neighborhood to the south would be altered with the addition of materials and equipment during construction. Overall visual sensitivity from the neighborhood would be moderate to high due to the duration of view. Construction of the Project temporarily would result in a degree of adverse change to visual quality on the Project site; however, construction would not impair or block any sensitive or unique visual resources or landscapes such as the southern extent of the Diablo Range. Therefore, the overall degree of visual change that would result from construction of the Project would be low to moderate. As shown in Table 3.2-1, the visual impacts of Project construction would be considered adverse but not significant.

Therefore, the presence and use of materials and equipment during construction or decommissioning would not substantially degrade the existing visual character or quality of public views of the site. Construction associated with the solar facility and ESS would result in a **less-than-significant impact**.

Mitigation: None Required.

Operation

As described in Chapter 2, the Project, once operational, would consist of multiple solar arrays (i.e., photovoltaic [PV] modules arranged in rows) electrically connected to create a utility-scale solar PV generating facility. Each solar array would consist of PV solar modules supported by racking systems and a single-axis tracking system (Figure 2-4). Medium voltage power lines would cross SR 33 and Sutter Avenue (underground or overhead) to connect the arrays to the electrical collector system. The ESS would consist of battery banks housed in electrical enclosures and buried electrical conduit. Two (20 feet by 20 feet) prefabricated buildings would be installed on the Project site; one used for operations and maintenance, and the other for control services. Water storage tanks, meteorological data collection systems, telecommunication facilities (in trenched subsurface locations), 20.25 miles of new (gravel and paved) access roads, staging, laydown, and parking would also be developed for the Project.

Perimeter fencing is proposed to include a 6-foot-tall galvanized chain-link fence with an additional foot of height containing three strands of barbed wire for security. The chain-link fence would be placed around approximately 1,938 acres of the Project site to surround the Project components. Access gates at the proposed entrances would be the same height as the fence. Signage would be provided, as described in Section 2.5.1.4, to identify the project owner and specify private property and include emergency services and high voltage safety indicator signage for public safety and security purposes.

To help assess the degree of visual change to the Project site and surrounding area, figures are provided depicting existing representative views along with visual simulations of the Project from each of the four KOPs described in Section 3.2.2.2.

KOP 1 Existing Visual Character

Motorists would be the primary viewer group at this KOP. Motorists traveling southbound along SR 33 may experience views similar to those depicted in KOP 1 at the northern edge of the Project site. The viewing experience for motorists would be fleeting and generally limited based on the speed of travel. As depicted in **Figure 3.2-6A**, the view is open and expansive with green grassland vegetation in winter months, and tawny grass in the agricultural fields in summer. The Kettleman Hills frame the view, and there are vertical low fence posts and wooden power poles aligned along the roadway. Steel lattice towers appear as light gray structural elements in the background view.

KOP 1 Simulated Visual Conditions

As depicted in **Figure 3.2-6B**, the simulated view along southbound SR 33 at KOP 1 remains open and expansive. However, with the addition of perimeter fencing along both sides of the roadway, taller gen-tie line structures appear in the distant view, and low-profile solar arrays appear below the line of foothills along the horizon. For motorists traveling along southbound SR 33, visual sensitivity would be considered low to moderate as views would be fleeting (seen from highway speeds) and of limited duration. When seen while traveling, the solar arrays would appear blurred and would not be visually distinctive. The overall visual change would be low to moderate, resulting in effects that would be visually adverse, but less than significant.



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SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-6
Representative and Simulated Views from KOP 1

ESA

Figures 3.2-6A and 3.2-6B depict the representative and simulated views as seen from KOP 1. Using the framework for overall visual impacts (Table 3.2-1), the overall low to moderate visual sensitivity and the overall low to moderate visual change posed by the Project would conservatively result in impacts that would be adverse, but not significant. Visual impacts associated with the Project from the perspective of KOP 1 would be **less than significant**.

KOP 2 Existing Visual Character

KOP 2 is a northbound view heading northwest along SR 33 from the southern edge of the Project site. Motorists may experience a similar view while traveling north through Fresno County. Motorists traveling northwest along SR 33 would have fleeting views of some of these same features at KOP 2, as depicted in **Figure 3.2-7A**. Motorists would be the primary viewer group at this KOP. Evident in the middle ground view are existing structures. Power poles can be seen on either side of the roadway. Low wood fence posts can be seen along the route with an orchard extending out to the western foothills. Agricultural fields and structures can be seen to the east in this representative view. Green and blue hues shape the foothills beyond the powerlines in the distance in the background view. The agricultural field would be covered in green vegetation in winter and spring months, and tawny vegetation in the summer and fall. Evident in the middle ground view are existing structures. Visual sensitivity for motorists traveling northbound along SR 33 would also be low to moderate as views would be fleeting, seen from high speeds, and of limited duration.

KOP 2 Simulated Visual Conditions

As depicted in **Figure 3.2-7B**, the simulated view of solar arrays adds a narrow line of dark gray built features to the agricultural fields. With the low profile of these Project components, the arrays would be barely visible and would not create a strong visual contrast. The southern extent of the Diablo Range would continue to frame the background view along the horizon in the distance through the transmission line alignment, which is evident under existing conditions. Viewer sensitivity would depend on the duration of view. For motorists traveling along northbound SR 33, the views while passing solar arrays and the ESS would be fleeting and partially blurred (depending on the speed of travel). Viewer sensitivity for motorists would be low to moderate. Public views from residences immediately to the east of KOP 2 would be of longer duration. Visual sensitivity for residents would be moderate to high (as discussed under KOP 3). The overall visual change associated with the addition of the Project would be moderate.

For similar reasons as described for KOP 1, from the perspective of KOP 2 (Figures 3.2-7A and 3.2-7B), the overall low to moderate visual sensitivity and the low to moderate visual change would conservatively result in impacts that would be adverse but not significant. Therefore, impacts from KOP 2 under Project operation would be **less than significant**.



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SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-7
Representative and Simulated Views from KOP 2

ESA

KOP 3 Existing Visual Character

As depicted in **Figure 3.2-8A**, the representative public view at KOP 3 is from the Lost Hills neighborhood along the southern edge of the Project site. This view, looking northwest from the northern edge of the Lost Hills neighborhood, shows a green agricultural field through a post and wire fence in the foreground with foothills and power lines in middle ground view and distant residential structures against the mountains in the background. The agricultural field would be covered in green vegetation in winter and spring months, and tawny vegetation in the summer and fall. Grazing by sheep may be observed seasonally across portions of the site. Due to sparse population in the Lost Hills community, the number of viewers would be limited; however, the duration of view from the neighborhood would be extended. This public view would be seen from residences presumably for prolonged periods of time, and as temporary views for motorists traveling at low speeds along local roads near Lost Hills Road. Overall visual sensitivity from this perspective would be moderate to high for the neighborhood, or low to moderate for motorists.

KOP 3 Simulated Visual Conditions

From the simulated perspective of KOP 3 looking northwest from the Lost Hills neighborhood (**Figure 3.2-8B**), the solar arrays would be visible in the foreground extending across the entire length of the agricultural field. Metallic support structures add a visible contrast to the field along with shaded gray solar arrays in a horizontal alignment across the field. Due to the low profile, the undulating foothills and distant mountains would remain visible as distinctive features in the background view. There would be fewer viewers from KOP 3 compared to the number of motorists that would observe the site (along SR 33) from KOP 1 and KOP 2. However, due to the prolonged duration of view, from the perspective of KOP 3, visual sensitivity from the Lost Hills neighborhood would be moderate to high. The overall visual change associated with the Project from KOP 3 would be low to moderate.

From KOP 3, the view of the solar arrays in the foreground, and potentially the ESS and Pacific Gas and Electric Company (PG&E) improvements in the background (refer to *PG&E Infrastructure* discussion below), would be noticeable and would alter the moderate visual quality of the site. However, views of the mountain range from this perspective would not be obstructed (as shown in Figure 3.2-8B). The mountains would remain visually distinctive from this vantage point along the horizon, even with the added components of the Project. Using the qualitative framework for analysis of visual effects (Table 3.2-1), the overall moderate visual quality and range of moderate to high visual sensitivity would result in a visual change that would be adverse, but not significant. Impacts of the solar arrays and ESS from KOP 3 would be less than significant.



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SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-8
Representative and Simulated Views from KOP 3

ESA

KOP 4 Existing Visual Character

KOP 4 is a view similar to what motorists may experience as they travel south along Sutter Avenue (**Figure 3.2-9A**). This roadway is a local thoroughfare linking to I-5. Looking south along Sutter Avenue, motorists from this vantage point may see a dirt turn out, an open agricultural field, and a seasonal creek to the west in the foreground. Few built structures can be seen from this perspective, including vertical power poles aligned along the roadway extending into the distance. The southern extent of the Diablo Range is in view along the horizon. The duration of view for motorists would be generally limited when traveling at highway speeds. Visual sensitivity from KOP 4 would be low to moderate.

KOP 4 Simulated Visual Conditions

Under simulated Project conditions as shown in **Figure 3.2-9B**, solar arrays would be visible in the middle-ground and foreground views. Due to the low-profile design for these components, there are few visual obstructions (added by the Project) against the mountains visible in the background view along the horizon. The Project would not alter the creeks or wetlands that extend through the Project site; thus, no alteration of these features is depicted in the visual simulation. The overall visual change associated with the Project view from KOP 4 would be moderate.

The overall low to moderate visual sensitivity from KOP 4 and the overall moderate visual change would result in visual impacts that would be adverse, but not significant. Impacts associated with the Project's solar arrays and ESS would be **less than significant**.

Mitigation: None required.

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

Impact 3.2-2: 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*).

Construction and Decommissioning

Lighting: Construction and decommissioning of the Project would occur predominantly during daylight hours. Some nighttime activities may be required such as electrical connection, inspection, and testing. As described in Section 2.5.1.4, motion sensor or manually activated lighting would be installed as part of the Project. Lighting would only be implemented in areas where it is necessary for safety, security, and construction purposes. All lighting would be shielded and directed downward to minimize illumination of the night sky or surrounding receptors beyond the Project site.

Because most of the Project's construction and decommissioning would take place during daytime hours and all lighting necessary to complete required nighttime activities would be shielded and directed downward, the Project would not create a new source of substantial light. Construction and decommissioning impacts related to this criterion would be **less than significant**.



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SOURCE: BayWa r.e. Solar Projects, LLC, 2024

Cornucopia Hybrid Project

Figure 3.2-9
Representative and Simulated Views from KOP 4

ESA

Glare: Construction would entail increased vehicular traffic and the presence, use, and transport of construction equipment and materials. Conditions of temporary glare could occur associated with an increased presence of reflective materials on the construction site, including from excavators' windows and other equipment. The temporary sources of glare would not be in fixed locations during construction since the equipment would be used and moved according to the scheduled construction or decommissioning activities required throughout the site. Although temporary sources of glare would be added during construction and decommissioning, the reflective materials and equipment would not remain on the site following these phases. Therefore, impacts associated with glare would be **less than significant**.

Operation and Maintenance

Lighting: As described in Section 2.9.1, *Glare and Lighting*, to reduce potential impacts on aesthetics from nighttime lighting and daytime glare, the Project would include the minimal amount of lighting required for safety, a security lighting system that would be motion activated (rather than timed to remain on from dusk to dawn) and shielded or directing lighting downward to minimize off-site impacts, including on nighttime skies. The PV solar panels would not include light fixtures and are designed to absorb rather than emit or reflect light, so these components would not contribute to lighting at the site or surroundings, as described in further detail below. Visual impacts related to added operational lighting would be **less than significant**.

Glare: The reflection of sunlight off the surfaces of solar panels would be the primary source of potential glare from the Project. Secondarily, metallic structures could reflect glare, depending on the angle of view. 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 to maximize the efficiency of energy production. The glare and reflectance levels from a given PV system are lower than the glare and reflectance levels of steel, snow, standard glass, plexiglass, and smooth water (Shields 2010) and are further reduced with the application of anti-reflective coatings. PV suppliers typically use stippled glass for panels as the “texturing” of the glass to allow more light energy to be transmitted through the PV glass while minimizing the reflected light. With the application of anti-reflective coatings and use of modern PV glass technology, Project PV panels would display overall low reflectivity and not result in conditions of glare. Additionally, any residual light reflected from the PV panels (not absorbed into energy transmission) would travel above the line of sight of most receptors. PV panel tracking systems would position the arrays so that the sun’s rays would be perpendicular to the face of the panel. 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, residual light reflected from the panel would be reflected back toward the sun. 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 Harris Ranch Airport, located approximately 13 miles to the north) and the angle from which pilots could view the site, the Project is not expected to adversely affect the vision of pilots during takeoff or landing.

Structural supports for the solar arrays would likely be metallic and, as such, could transmit glare to the viewer, depending on the angle of view. These structures would be appropriately spaced and not be located perpendicular to any active road alignments, so it is unlikely that vehicle lights would reflect a substantial amount of glare off of these structures. The ESS, operation and maintenance (O&M) building, and prefabricated control services buildings would be set back away from any roadways and would be

painted such that glare would not be a prominent concern for these structures. Visual effects related to glare from the solar facility and ESS components would not be substantial. Associated impacts would be **less than significant**.

Pacific Gas and Electric Company Infrastructure

As described in Section 2.5.1.2, *Substation*, and shown in Figure 2-3, a new substation and PG&E switching station would be constructed in the southwest portion of the Project site. The substation would include high voltage transformers and an electrical control building to step up the voltage and would connect to PG&E's switching station via a 200-foot-long new 230kV transmission (or gen-tie) line. No poles are proposed as part of the design.

There are no designated scenic vistas within the viewshed of the PG&E infrastructure location. Additionally, the PG&E infrastructure location does not contain any natural scenic resources or historic structures and is not located within view of any designated or eligible state scenic highways. For these reasons, there would be **no impact** under criteria a) and b).

During construction and decommissioning, the PG&E infrastructure components would entail use of the same vehicles, equipment, and locations as for the solar facility and ESS. The PG&E infrastructure, once operational, would be one component of the larger Project as visible from identified KOPs and other public viewpoints. The PG&E infrastructure was not included in any of the Project visual simulations discussed above. However, the analysis presented in this aesthetics evaluation is inclusive of PG&E infrastructure. For motorists traveling along northbound SR 33, the views of passing PG&E infrastructure would be fleeting and partially blurred (depending on the speed of travel). Public views from residences in the Lost Hills neighborhood would be of longer duration. The overall visual change associated with the addition of the Project, including the PG&E infrastructure, would be moderate from KOP 2 and from low to moderate, or moderate to high, from KOP 3. Impacts of the PG&E infrastructure from all KOPs would be less than significant.

Using Table 3.2-1 for each of the KOPs, the potential for substantial degradation of public views and visual character of the site under this criterion would be adverse, but not significant. Due to the location of these facilities relative to public views, potential impacts would be smaller compared to the Project's solar arrays and ESS. Consequently, construction, operation, and decommissioning associated with the PG&E infrastructure would result in a **less-than-significant** impact under criterion c).

The PG&E substation, switchyard and interconnection infrastructure would have metallic structures, such as transformers and switching gear that could reflect glare. These structures would be sited at a safe distance from motorist lights on SR 33 (located approximately 0.65 miles to the west). Because the proposed location for these facilities is set back from all roadways and there are few if any residences in close proximity to these components, impacts related to light and glare associated with the PG&E infrastructure would also be **less than significant** with respect to criterion d).

Mitigation: None required.

3.2.5 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, the Project could not 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 such as those from agricultural operations. Therefore, the Project's impact on visual resources resulting from glare would not cause or contribute to a significant adverse cumulative impact. (*No Impact*)

Impact 3.2-3 The Project would not cause or contribute to a significant cumulative effect on aesthetics, including the existing visual character or quality of public views. (*Less-Than-Significant Impact*)

The geographic scope of potential cumulative impacts to the existing visual character or quality of public views includes the viewshed along SR 33, Sutter Avenue, south to the Lost Hills community 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 away from the Project site would not be visible within the same viewshed as the Project, as discussed in Section 3.2.2.1. Section 3.1.3 contains a list of the projects considered as part of the cumulative scenario.

Cumulative impacts could occur if the Project contributes visual changes to the viewshed that are noticeable to the public, either from the same observation point or as a noticeable element in a cumulative viewing experience. There are numerous solar facilities in various stages of construction or operation throughout southwestern Fresno County, but they are all more than 3 miles away from the Project site. Additionally, the Project's location in Westside Valley would tend to isolate it geographically from other solar PV installations in the Central Valley. 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 low to moderate level of visual change to the study area. In conjunction with the low-to-moderate visual sensitivity of viewers in the landscape, impacts to visual quality resulting from the Project considered with other cumulative projects would be less than significant.

For the same reasons, the PG&E Infrastructure improvements would not cause or contribute to cumulative impacts related to aesthetics. The PG&E infrastructure would consist of a 230kV switching station, located adjacent to the Project substation and a new gen-tie line approximately 200 feet in length. As with the Project components, the PG&E infrastructure would be noticeable along Sutter Avenue looking southeast (KOP 4). However, as discussed under Impact 3.2-1, the visual sensitivity of this location is considered low to moderate. The overall low to moderate visual sensitivity from KOP 4 and the overall moderate visual change associated with the added Project and PG&E infrastructure would result in a less-than-significant visual impact. As listed in Table 3.1-1 and depicted on Figure 3.1-1, all of the identified cumulative projects are more than 3 miles away from the Project and PG&E infrastructure. Therefore, the incremental less-than-significant visual impact caused by the Project and PG&E infrastructure would not combine with the visual impacts of other cumulative projects to result in a cumulative effect. The incremental less-than-significant impact would not be cumulatively considerable. The cumulative effect associated with the Project and PG&E infrastructure would not be significant and no mitigation would be necessary.

3.2.6 References

Caltrans (California Department of Transportation). 2012. Scenic Highway Guidelines. Available: https://www.cahighways.org/caltrans-resources/scenic/120412-scenic_highway_guidelines.pdf. Accessed September 16, 2024.

Fresno County. 2024. General Plan Policy Document. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed September 9, 2024.

Shields, M. 2010. PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Environment. Available: https://conservationtools-production.s3.amazonaws.com/library_item_files/1684/1891/wp-pv-systems-low-levels-glare-reflectance-vs-surrounding-environment.pdf?AWSAccessKeyId=AKIAIQFJLILYGVDR4AMQ&Expires=1613070138&Signature=AmwYw3XmOwKspy2QnaOIVHWiyyw%3D. Accessed September 16, 2024.

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3.3 Agriculture and Forestry Resources

This section identifies and evaluates issues related to agricultural resources: specific categories of farmland shown on maps prepared by the California Department of Conservation pursuant to the Farmland Mapping and Monitoring Program (FMMP), property zoned for agricultural use, and Williamson Act program resources. It also identifies and evaluates issues related to forestry resources, including forest land and timberland. The section 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 Department of Conservation regarding potential impacts on agricultural resources related to the conversion of agricultural lands and compatibility with lands within an agricultural preserve and/or enrolled in a Williamson Act contract (**Appendix A**, *Scoping Report*). The County received no scoping input regarding forestry resources.

The analysis in this section is based in part on the Project-specific, site-specific Land Evaluation and Site Assessment (LESA) prepared on the Applicant's behalf (**Appendix D**, *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 record, in the preparation of this Draft EIR.

3.3.1 Setting

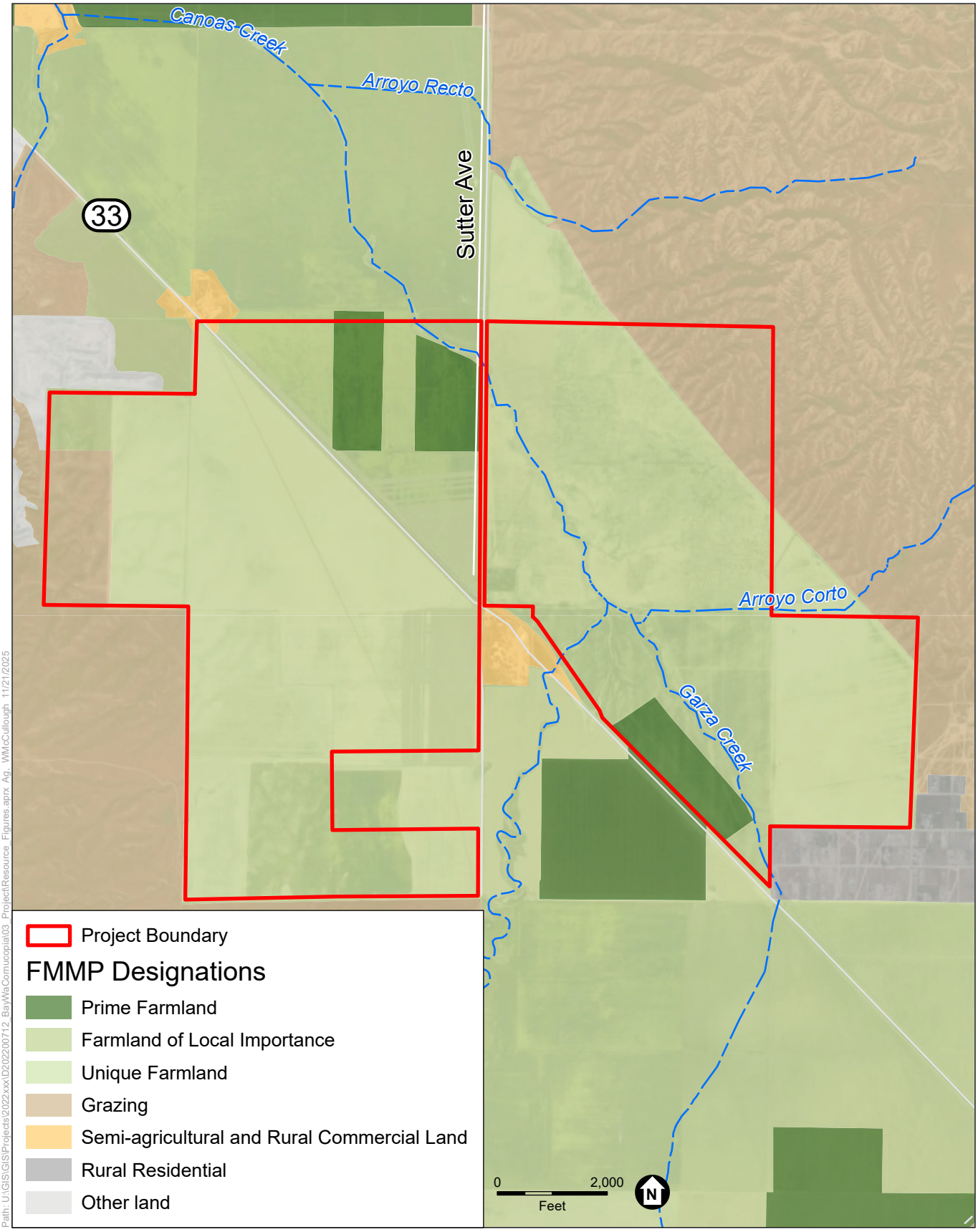
3.3.1.1 Study Area

The study area for agriculture and forestry resources consists of farmland in Fresno County (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on maps prepared pursuant to the FMMP), and forest land and timberland in the county that meet the definitions provided below. For purposes of the LESA modeling and the evaluation of Williamson Act contracted lands, the study area includes the Project site (2,446 acres within Assessor's Parcel Numbers [APNs] 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12S, and 085-110-13S) plus the Project's "zone of influence," defined as the parcels that are intersected by a 0.25-mile buffer around the Project site.

3.3.1.2 Environmental Setting

Agricultural Resources

The approximately 2,446-acre Project site is relatively flat and undeveloped. Consistent with its Fresno County General Plan designation as Agriculture (Fresno County 2024a) and its zoning designation as Exclusive Agricultural (AE) (Fresno County 2024b), the Project site has been used for dry-farmed (unirrigated) agricultural production of wheat and grazing fodder. **Figure 3.3-1**, *Important Farmland*, depicts the FMMP-mapped farmland within the study area. Based on California Department of Conservation data, the Project site contains a mixture of Farmland of Local Importance and Prime Farmland. Approximately 77.2 acres are mapped as Prime Farmland and the remainder of the Project site is mapped as Farmland of Local Importance. Prime Farmland also exists south of the site, although adjacent parcels are composed mostly of Farmland of Local Importance, as well as semi-agricultural and rural commercial land, and urban and built-up land. Large contiguous areas of Prime Farmland are located farther north of the Project site (DOC 2024a).



Source: ESA, 2024; Rincon Consultants, Inc., 2024; CDOC, 2024

Cornucopia Solar Project

Figure 3.3-1
Important Farmland

ESA

According to California Department of Water Resources statewide crop mapping data for 2018–2022, agricultural uses are located primarily north and south of the Project site. Generally, fallow land is adjacent to the north, and lands farther north were mapped as having deciduous fruits and nuts, and grain and hay crops.[1] Active agricultural use has occurred on the adjacent parcel south of State Route 33, which is mapped as having deciduous fruits and nuts in all years from 2018 to 2022. Other lands to the south are generally fallow but have contained grain and hay crops as well as truck, nursery, and berry crops (DWR 2024).[2] Undeveloped rangeland used for grazing is also located west of the Project site.

The Storie Index Rating Classes and Rating Values for specific soils are identified as part of soil surveys conducted by the U.S. Department of Agriculture. Soils are assigned to a Storie Index Rating Class from Grade 1 to Grade 6, based on the Storie Index Rating Value. The Storie Index Rating is based on the soil's surface and subsurface chemical and physical properties and surface landscape features. Grade 1 soils are representative of soils that are well-suited for agriculture, while Grade 6 soils are not suited to agriculture. The Storie Index does not account for irrigated versus non-irrigated land, so the Storie Index Rating score represents the entirety of a particular soil type (Appendix D).

The Project site generally contains soils that are well-suited for agricultural use and consist of the types and quantities listed in **Table 3.3-1**. However, the largest single soil type area is Grade 3, which is an average class of soil suitability for agriculture. The allocation of soil types within the Project site is shown in **Figure 3.3-2**, *Williamson Act–Contracted Lands*.

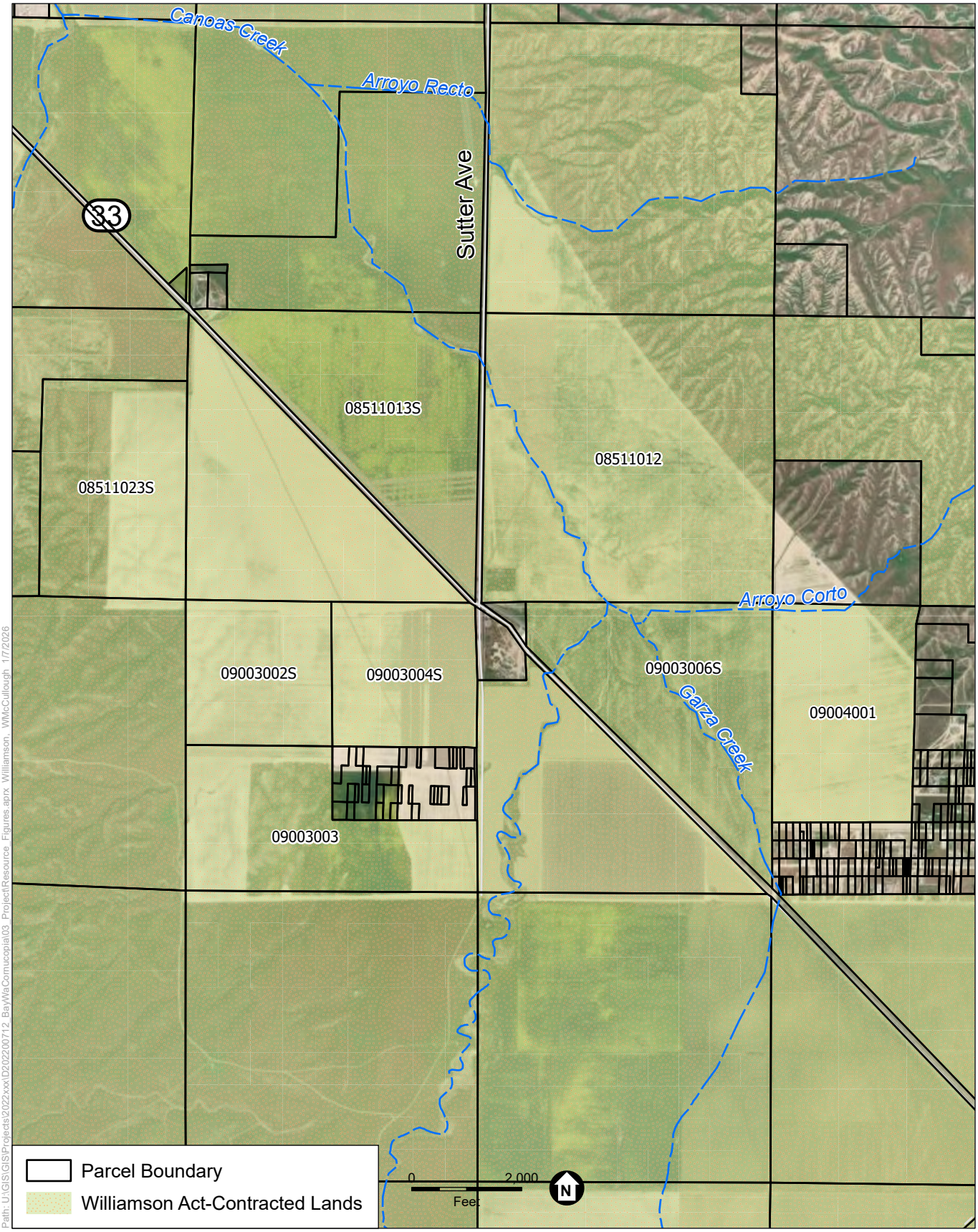
TABLE 3.3-1
PROJECT SITE SOILS AND STORIE INDEX SCORES

Soil Map Number	Soil Type	Acreage	Percentage of Project Site	Storie Index Rating Class
459	Ciervo clay, 0 to 2 percent slopes (non-irrigated)	430.4	17.6%	Grade 3
404	Milham-Guijarral association, 5 to 15 percent slopes (non-irrigated)	387.9	15.9%	Grade 1
479	Cerini clay loam, 0 to 2 percent slopes (non-irrigated)	264.1	10.8%	Grade 1
451	Milham sandy loam, 0 to 2 percent slopes, MLRA 17 (non-irrigated)	232.2	9.5%	Grade 2
478	Cerini sandy loam, 0 to 2 percent slopes, MLRA 17 (non-irrigated)	212.6	8.7%	Grade 1
436	Panoche loam, 0 to 2 percent slopes (non-irrigated)	201.5	8.2%	Grade 1
438	Panoche loam, 2 to 5 percent slopes (non-irrigated)	191.0	7.8%	Grade 1
437	Panoche sandy loam, 0 to 2 percent slopes (non-irrigated)	149.3	6.1%	Grade 1
445	Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17 (non-irrigated)	137.3	5.6%	Grade 1
412	Yribarren clay loam, 0 to 2 percent slopes (non-irrigated)	86.3	3.5%	Grade 1
452	Milham sandy loam, 2 to 5 percent slopes (non-irrigated)	85.6	3.5%	Grade 1
406	Guijarral sandy loam, 2 to 5 percent slopes (non-irrigated)	56.9	2.3%	Grade 1
442	Panoche clay loam 0 to 2 percent slopes (non-irrigated)	9.3	0.4%	Grade 1
960	Excelsior sandy substratum-westhaven association, flooded, 0 to 2 percent slopes (non-irrigated)	2.3	0.1%	Grade 3
TOTAL	—	**2,446.7**	**100%**	—

NOTE: MLRA = Major land resource area, a U.S. Department of Agriculture category for geographically associated land resource units.
SOURCE: Data compiled by Environmental Science Associates in 2024 (see Appendix D)

[1] Common deciduous fruits and nuts crops include almond, cherry, pistachio, and stone fruit. Common grain and hay crops include barley, forage hay, and wheat (Delta Protection Commission 2020).

[2] Truck, nursery, and berry crops are a category of fruit and vegetable crops that were traditionally transported to cities by truck for sale. Some common truck crops include broccoli, lettuce, and peppers (Delta Protection Commission 2020).



Source: ESA, 2024; Rincon Consultants, Inc., 2024; CDOC, 2024

Cornucopia Hybrid Project

Figure 3.3-2
Williamson Act-Contracted Lands

ESA

Agricultural use of the Project site can be constrained by water resource availability under existing environmental conditions. The Project site's landowners have indicated that irrigated agricultural production cannot occur because of a lack of water availability, so dryland crop production is feasible only in non-drought years, depending on the amount of rainfall in the area (Appendix D). The entire Project site is used for agricultural production of wheat and farmers employ dryland farming techniques across the entire study area.

The entire Project site contains parcels subject to Williamson Act contracts (defined below in Section 3.3.1.3, *Regulatory Setting*). The Project parcels and their corresponding Williamson Act contracts are described in Table 2-1, *Parcel Identification*, in Chapter 2, *Project Description*.

As depicted in Figure 3.3-2, which shows Williamson Act–contracted lands within the Project area, Williamson Act–contracted parcels are located immediately adjacent to the Project site to the north and west. Williamson Act–contracted parcels are also located immediately adjacent to the Project site to the south, except for the adjacent parcel southeast of the intersection of State Route 33 and Sutter Avenue (APN 090-030-05S), and parcels between the Project site's southern horseshoe boundary (between APNs 090-030-04S and 090-030-03). Parcels adjacent to the Project site to the east are also not Williamson Act–contracted lands.

Forestry Resources

No trees are present on the Project site. The Project site does not contain any land defined as forest land (as defined by Public Resources Code §12220[g]), timberland (as defined by Public Resources Code §4526), or land zoned Timberland Production (as defined by Government Code §51104[g]). Almost all lands available for timber production in Fresno County lie within the southern part of Sierra National Forest and the northern portion of Sequoia National Forest (Fresno County 2024a); these forests are located more than 75 miles from the Project site.

3.3.1.3 Regulatory Setting

Federal

No federal plans or regulations apply to the analysis of Project impacts on agriculture or forestry resources.

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. The minimum land use mapping unit is 10 acres unless specified; smaller units of land are incorporated into the surrounding map classifications. The Project site is classified as Prime Farmland (DOC 2024a).

For the purposes of this environmental analysis, the term *Farmland* refers to the FMMP map categories Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (hereafter referred to collectively as "Farmland"). These map categories are defined as follows (DOC 2024b):

- ***Prime Farmland:*** Land that has the best combination of physical and chemical features able to sustain long-term agricultural production. It 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 4 years prior to the mapping date.

- ***Farmland of Statewide Importance:*** Land that is 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 4 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 4 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 Farmland, Farmland of Statewide Importance, or Unique Farmland. This includes land that is or has been used for dryland farming, irrigated pasture, confined livestock and dairy, poultry facilities, aquaculture, and grazing land. A fifth category is *Grazing Land*, which was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities and describes land on which the existing vegetation is suited to the grazing of livestock (DOC 2024b). Public Resources Code §21060.1 does not include either Farmland of Local Importance or Grazing Land in the definition of *agriculture*.

In California, land must meet at least one of the five criteria set forth below to qualify as prime agricultural land (Government Code §51201):

(1) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.

(2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.[3]

(3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre defined by the United States Department of Agriculture.

(4) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.

(5) Land which has returned from the production of unprocessed agricultural plant products an annual gross value of not less than two hundred dollars ($200) per acre for three of the past five years.

California Land Conservation Act of 1965 (Williamson Act)

The Williamson Act, the commonly used name for the California Land Conservation Act of 1965 (Government Code §51200 et seq.), is the state's primary program aimed at conserving private land for agricultural and open space uses. The Williamson Act provides a mechanism through which private landowners can contract with counties and cities to voluntarily restrict their land to agricultural and compatible open space uses. In return, Williamson Act contracts offer tax incentives to property owners

[3] The *Storie Index* is a method of soil rating based on soil characteristics (e.g., depth, texture, permeability, chemical characteristics, drainage, surface runoff, and climate) that govern the land's potential utilization and productivity capacity. A Storie index rating of 80–100 classifies the land as "excellent," the highest range of the index.

by ensuring that land is assessed for retained farming and open space uses (as opposed to assessments based on full market value). Contracts typically restrict land use to agriculture for a period of 10 years.

The Williamson Act establishes that specified uses are compatible with Williamson Act contracting. See Government Code §51238(a), which states:

> *Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of… electric… facilities are hereby determined to be compatible uses within any agricultural preserve.*
>
> *No land occupied by… electric… facilities shall be excluded from an agricultural preserve by reason of that use.*

According to §51238.1, a lead agency may approve uses on contracted lands if they are consistent with the following principles of compatibility:

(1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
(2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

In evaluating compatibility, a lead agency considers the impacts of the proposed use on noncontracted lands in the agricultural preserve or preserves. The lead agency may incorporate conditions into its approval of a proposed use to ensure compatibility.

Williamson Act contracts automatically renew on each anniversary date of the contract unless the landowner petitions for cancellation or nonrenewal of the entire contract or a portion of the contracted land, and the participating county (or city) serves notice of nonrenewal or cancellation. In the case of nonrenewal, the contract ends after nine years. In the case of cancellation, the contract ends with immediate effect, with approval of the cancellation by the board of supervisors. The landowner must submit a proposal that describes how the land will be used after a contract is cancelled, along with a list of all relevant public agencies with permit authority over the proposed use(s). Public notice and an assessment of fees (cancellation valuation) are required to certify the cancellation (DOC 2022). Additionally, a county or city may grant tentative approval of a cancellation if it makes certain findings, i.e., either that cancellation is consistent with the Williamson Act or that cancellation is in the public interest (Government Code §51282[a]).

California Farmland Conservancy Program of 1996

The California Department of Conservation's Division of Land Resource Protection administers the state-level California Farmland Conservancy Program, which widens the spectrum of agricultural land conservation options via the use of permanent agricultural conservation easements. The program protects and conserves agricultural lands by administering permanent agricultural conservation easements,

provides a funding mechanism, and administers related technical assistance grant support for agricultural protection (DOC 2024c).

California Public Resources Code

Public Resources Code §12220(g) defines *forest land* 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." Public Resources Code §4526 defines *timberland* 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 Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County General Plan

The Agriculture and Land Use Element of the Fresno County General Plan (General Plan) describes land use designations and development standards for land in unincorporated Fresno County, and establishes goals, policies, and programs related to agriculture and land use. The General Plan's 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. The following goal, policies, and program related to agriculture are applicable to the Project:

> **Goal LU-A:** To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.
>
> ***Policy LU-A.1: Agricultural Land Conservation.*** 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 or can be provided consistent with the adopted General or Community Plan.
>
> ***Policy LU-A.2: Agriculture-related Uses.*** 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 the on-site agricultural operation.
>
> ***Policy LU-A.3: Special Agricultural Uses.*** 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. Approval of these and similar uses in areas designated Agriculture shall be subject to 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 nonurban 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;

e. For proposed agricultural commercial center uses the following additional criteria shall apply:

    1. Commercial uses should be clustered in centers instead of single uses.

    2. To minimize proliferation of commercial centers and overlapping of trade areas, commercial centers shall be located a minimum of two (2) miles from a city sphere of influence and four (4) miles from any existing or approved agricultural or rural residential commercial center or designated commercial area.

    3. New commercial uses should be located within or adjacent to existing centers.

    4. Sites should be located on a major road serving the surrounding area.

    5. Commercial centers should not encompass more than one-quarter (1/4) mile of road frontage, or one eighth (1/8) mile if both sides of the road are involved, and should not provide potential for developments exceeding ten (10) separate business activities, exclusive of caretakers' residences;

f. For proposed value-added agricultural processing facilities, the evaluation under criteria "a" above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services; and

g. For proposed churches and schools, the evaluation under criteria LU-A.3a above shall include consideration of the size of the facility. Such facilities should be no larger than needed to serve the surrounding agricultural community.

h. When approving a discretionary permit for an existing commercial use, the criteria listed above shall apply except for LU-A.3b, e2, e4, and e5.

Policy LU-A.12: Agricultural Protection. In adopting land uses policies, regulations, and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.

Policy LU-A.13: Agricultural Buffers. The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed nonagricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.

Policy LU-A.14: Agricultural Land Conversion Review. 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.15: Right-to-Farm Notice. The County shall generally condition discretionary permits for development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice, which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.

Policy LU-A.16: Agricultural Land Preservation Programs. The County should implement agricultural land preservation programs for long-term conservation of viable agricultural operations. Examples of programs to be considered include: land trusts; conservation easements; dedication incentives; new and continued Williamson Act contracts; Farmland Security Act contracts; the California Farmland Conservancy Program; agricultural education programs; zoning regulations; agricultural mitigation fee program; urban growth boundaries; transfer of development rights; purchase of development rights; and agricultural buffer policies.

Policy LU-A.17: Williamson Act Contracts. The County should accept Williamson Act contracts on all designated agricultural land subject to location, acreage, and use limitations established by the County provided that the County receives full subvention payment as partial replacement of local property tax revenue foregone as a result of participating in the Williamson Act program. All development and uses and activities that occur on land under contract shall comply with the requirements of the California Land Conservation Act and adopted County Rules.

Policy LU-A.18: Land Improvement Programs. The County shall encourage land improvement programs to increase soil productivity in areas containing lesser quality agricultural soils.

Policy LU-A.19: Reduced Soil Erosion. The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC [University of California] Cooperative Extension, and other agencies and organizations.

Policy LU-A.23: Farmland Conversion. For discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the Farmland Mapping and Monitoring Program) to nonagricultural uses, the County shall consider and adopt feasible measures including, but not limited to:

- Acquisition of conservation easements at a 1:1 ratio for lands lost to nonagricultural uses.
- Fee title of agricultural mitigation land that may be held by a third party or the County.
- In lieu fees paid to the County that may be used to acquire future mitigation property.
- Mitigation banks.

The County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan, or the project is for housing which is predominately for persons of low or moderate income as defined in section 50093 of the Health and Safety Code. Further, the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code.

Fresno County Zoning Ordinance

According to the Fresno County Zoning Map, the parcels associated with APNs 090-030-06S, 090-030-04S, 090-030-02S, 085-110-13S are zoned AE-20, the parcel associated with APN 090-040-01 is zoned AE-40, and the parcels associated with APNs 090-030-03, 085-110-23S, and 085-110-12 are zoned as AE-20/AE-40 pursuant to §808.2 of the Fresno County Zoning Code. The "AE" District is intended to be an exclusive agricultural district and for uses integral to an agricultural operation. This district is intended

to protect the general welfare of the agricultural community from encroachments of non-agricultural uses, which by their nature would be injurious to the physical and economic well-being of the agricultural district. Permitted uses within the AE district include livestock and poultry (breeding, raising, and maintenance), raising of crops, farm dwellings, packaging facilities, and other agriculture-related uses (Fresno County 2024c). No overlay designations apply to the Project site (Fresno County 2024c).

The County processes photovoltaic solar facility projects through the Unclassified Conditional Use Permit (CUP) process for public utility and public services, structures, uses, and buildings, as described in Fresno County Zoning Code §853.B.14. Uses subject to Fresno County Director review and approval include communications equipment buildings, microwave relay structures, electrical (transmission and distribution) substations, and "commercial land leveling and development establishments when they are not operated in conjunction with, or as part of, a bona fide agricultural operation," among others. Exemptions from land use permit requirements as described in Fresno County Zoning Code §804.1.030 include the alteration, construction, erection, or maintenance of electric utilities by a public utility or public agency such as the California Public Utilities Commission (Fresno County 2024c).

Fresno County Solar Facility Guidelines

To balance the need to accommodate new renewable energy technology with the need to protect important farmlands and minimize impacts on existing agricultural operations, the County's land use process for evaluating solar facilities relies on flexible general guidelines and policies rather than specific standards. The Solar Facility Guidelines, adopted by the Fresno County Board of Supervisors in 2013 and revised in 2017, identify considerations to be evaluated as part of the County's process for evaluating solar facilities within the county (Fresno County 2017). Multiple provisions of the Solar Facility Guidelines are relevant to this analysis of potential impacts related to agricultural resources. For an analysis of the Project's consistency with the Solar Facility Guidelines as a whole, see **Appendix K**, *Land Use and Planning*. The following guidelines are specific to agricultural resources:

(1) Submission of information regarding historical agricultural use.

(2) Submission of information regarding sources of water.

(3) Identification of current status with respect to the Williamson Act, conservation easements, or other similar designations.

(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 for 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.

(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, §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 before the County's issuance of permits for the Project.

3.3.2 Significance Criteria

The Project would result in a significant impact related to agriculture and forestry resources if it would do any of the following:

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 §12220[g]), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §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.

3.3.3 Direct and Indirect Effects

3.3.3.1 Methodology

Generally, any conversion of land from one of FMMP map Farmland categories to a lesser quality category or a non-agricultural use would be considered an adverse impact. The Project's potential impacts on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance were evaluated based primarily on the LESA model, as an analytical framework for rating the quality of the land based on specific measurable features. Factors considered by the LESA model include soils, site acreage, water availability, and surrounding land uses (Appendix D). Other resources, such as Fresno County General Plan policies and County planning agricultural guidance, were also reviewed to inform this analysis.

A single LESA score is generated for a project after all individual land evaluation (LE) and site assessment (SA) factors have been scored and weighted. The final scoring is based on a 100-point scale as shown in **Table 3.3-2**, with 50 percent of the total LESA score derived from LE factors and 50 percent derived from SA factors.

TABLE 3.3-2
LAND EVALUATION AND SITE ASSESSMENT MODEL SIGNIFICANCE THRESHOLDS

Total LESA Score	Scoring Decision
0–39 points	Not considered significant.
40–59 points	Considered significant only if the LE and SA sub-scores are greater or equal to 20 points.
60–79 points	Considered significant unless either the LE or the SA sub-score is less than 20 points.
80–100 points	Considered significant.

NOTE: LE = Land Evaluation; LESA = Land Evaluation and Site Assessment; SA = Site Assessment
SOURCE: Data compiled by Environmental Science Associates in 2024 (see Appendix D)

3.3.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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 FMMP of the California Resources Agency, to non-agricultural use.

The Project site includes approximately 77.2 acres shown on maps prepared pursuant to the FMMP as Prime Farmland; no Unique Farmland or Farmland of Statewide Importance is found there. Accordingly, the Project would not convert any Unique Farmland or Farmland of Statewide Importance to non-agricultural use, and thus would cause no impact with respect to these types of Farmland. (*No Impact*)

Impact 3.3-1: The Project would convert Prime Farmland to non-agricultural use. (*Less than Significant*)

As discussed in Section 3.3.1.2, *Environmental Setting*, the Project site contains approximately 77.2 acres of Prime Farmland located in the north-central portion of the Project site (see Figure 3.3-1). Thus, approximately 77.2 acres of Prime Farmland would contain solar arrays, fencing, and other infrastructure under the Project. Construction, operation and maintenance, and decommissioning of the Project would take the affected acreage out of production for up to 40 years.

A final LESA score of 40–59 points is considered significant if the LE and SA sub-scores are greater than or equal to 20 points (Table 3.3-2). As shown in **Table 3.3-3**, *Final Land Evaluation and Site Assessment Score Summary*, the LESA prepared for the Project found that the LE and SA sub-scores for the Project are both greater than 20 points. This would suggest that the Project could have a potentially significant impact on agricultural resources; however, the Applicant proposes to continue agricultural use of the Project site by providing sheep grazing lands within and surrounding the area where the solar photovoltaic panels and equipment are proposed. The Project site is currently used for grazing fodder production. Although this specific agricultural use of the parcel would be suspended for the term of the CUP, a different agricultural use of the site would be maintained (i.e., sheep grazing for vegetation management) for the duration of the CUP period.

TABLE 3.3-3
FINAL LAND EVALUATION AND SITE ASSESSMENT SCORE SUMMARY

Total LESA Score	Factor Score (0–100 points)	Factor Weighting (Total = 1.00)	Weighted Factor Rating
Land Evaluation (LE)			
Land Capability Classification Rating	10	0.25	2.50
Storie Index Rating	83.0	0.25	20.80
LE Sub-score		***0.50***	***23.30***
Site Assessment (SA)			
Project Size Rating	100	0.15	15.00
Water Resources Availability Rating	20	0.15	3.00
Surrounding Agricultural Land Rating	10	0.15	1.50
Surrounding Protected Resource Lands Rating	90	0.05	4.50
SA Sub-score		***0.50***	***24.00***
TOTAL			**47.30**

NOTES: LE = Land Evaluation; LESA = Land Evaluation and Site Assessment; SA = Site Assessment
SOURCE: Data compiled by Environmental Science Associates in 2024 (see Appendix D)

Additionally, the LESA result shows that the weighted Storie Index Rating (20.80) is the component that most affects the Project's final LESA score. However, construction, operation, and maintenance of the solar facility and energy storage system (ESS) would not adversely affect any of the environmental characteristics of the site that qualify it for mapping as Prime Farmland on the basis of its Storie Index Rating.

The Storie Index Rating is based on the soil's surface and subsurface chemical and physical soil properties and its surface landscape features (Appendix D). The chemical and physical properties of the soil would remain substantially the same under Project conditions. Soil chemical properties primarily include concentrations of specific chemicals such as phosphorus, nitrogen, carbon, and other nutrients. No application of fertilizers or other soil amendments is proposed. Water-based dust suppression or appropriate soil stabilizers would be used for dust suppression. As analyzed in Section 3.10, *Hazards and Hazardous Materials*, the Project would cause a less-than-significant impact related to the routine transport, use, or disposal of hazardous materials and to general accidental spills. Although residual pesticides are present in on-site soils, the Project's proposed weed management and rodent control methods would not exacerbate them (see **Appendix B.1**, *Integrated Pest Management Plan*). Project construction, operation, and maintenance would not result in an adverse impact on the chemical composition of on-site soils.

The physical properties of soil include color, texture, structure, porosity, density, consistency, stability, and temperature. The Project proposes no changes that would affect soil color; however, grading would compact soil on some areas of the Project site to provide a stable base for proposed structures, equipment, and roads. Upon decommissioning, Project infrastructure would be removed and the site would be returned to a condition suitable for agricultural use pursuant to the requirements of a County-approved reclamation plan. All roads and other areas compacted during original construction or by equipment used

for decommissioning would be disked to aerate the soil, thus allowing the ground to restore the subgrade material to the proper density and depth consistent with existing conditions on-site. If necessary, fresh topsoil would be imported to the reclamation site by truck and distributed where gravel roads and parking spaces would be removed. Revegetation would consist of either broadcast distribution, a return to agricultural practices, or the sowing of an appropriate mix of rangeland seed across the site, as specified by local authorities at the time of decommissioning. See **Appendix B.2**, *Solar Reclamation Plan*, for additional details. The soil compaction that would occur during construction and last through the operation and maintenance period would be corrected during decommissioning, thus would not result in a significant adverse impact during all Project phases because, unlike a subdivision or a commercial center, the soil compaction would not affect the Project site's long-term suitability for agricultural use.

Four general factors are used to determine the Storie Index Rating of a particular soil: (A) permeability, available water capacity, and depth of the soil; (B) the texture of the surface soil; (C) the dominant slope of the soil body; and (X) other conditions more readily subject to management or modification by the land user (Appendix D). The following is a brief evaluation of the Project relative to each of these factors:

- **Factor (A)**—Project impacts on permeability and depth of the soil would be limited to the construction and the operation and maintenance periods and would be corrected during Project decommissioning and site restoration.
- **Factor (B)**—Implementation of the Project's *Solar Reclamation Plan* (Appendix B.2) would ensure that the texture of surface soils would be returned to a condition suitable for agricultural use.
- **Factor (C)**—The Project site is nearly flat to very gently sloping and would be returned to a similar condition after decommissioning.
- **The (X) factor**—The Project would implement the Applicant-proposed measures and design features described in Section 2.9 of Chapter 2, *Project Description*, in combination with requisite compliance with applicable laws and standards for the protection of the environment and any conditions of approval imposed by the County as lead agency. Such compliance would further ensure that the Project would not adversely affect any of the environmental characteristics of the site that qualify it for mapping as Prime Farmland on the basis of its Storie Index Rating.

Additionally, it is noted that the Storie Index does not take into account irrigated versus non-irrigated land, so the Storie Index score in the LESA represents the entirety of a particular soil category. As discussed in the LESA, irrigated agricultural production on the Project site has not historically occurred because of a lack of water availability. The entire Project site is used for agricultural production of wheat and farmers employ dryland farming techniques across the entire site. Dryland production is feasible only in non-drought years, depending on the amount of rainfall in the analysis area (Appendix D).

Furthermore, sheep grazing on the site is intended to enhance and improve soil health within the solar facility site. Research has shown that managed sheep grazing can improve productivity, soil carbon and fertility, and water-holding capacity (Teague and Barnes 2017). As such, based on the site-specific considerations discussed above, the Project's impact on Prime Farmland would be considered only a temporary reduction of the County's agricultural land resources, as the Project site itself could be returned to agricultural use after decommissioning and reclamation.

Although the Project would take the affected acreage out of production during the length of the solar lease, this temporary change of the site's use from agriculture to renewable energy generation would not be a significant adverse impact on Prime Farmland. County General Plan Policy LU-A.23 (Farmland Conversion) requires the County consider and adopt feasible measures to mitigate for the conversion of Farmland for discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the FMMP). Such mitigation could include the acquisition of conservation easements, mitigation land, fee-in-lieu, or mitigation banking.

The mitigation requirement in County General Plan Policy LU-A.23 does not apply to the Project for two reasons. First, the temporary change in use that would occur if the Project is approved does not constitute permanent conversion. Second, the Project's proposed use of sheep grazing would enhance and improve soil quality and so would directly support agricultural uses upon the conclusion of the CUP period. Further the temporary change in use would occur within existing farming unit(s), which would remain intact. As such, the temporary change in use of approximately 77.2 acres of Prime Farmland from a primarily agricultural use to a renewable energy generation one would not be a significant adverse impact.

Even if the mitigation requirement in County General Plan Policy LU-A.23 otherwise could apply, the County has authority consistent with Policy LU-A.23 to exempt projects like the Project from agricultural mitigation based on a determination that conversion is occurring pursuant to a local groundwater sustainability plan (GSP), is for housing, or if the loss of agricultural land is outweighed by specific, overriding benefits. As described in Section 3.11, *Hydrology and Water Quality*, the Project would comply with the GSP prepared and adopted by the Pleasant Valley Groundwater Sustainability Agency (GSA). The goal of the Pleasant Valley Subbasin and the GSA is to ensure that by 2042, the Pleasant Valley Subbasin will be managed in a sustainable manner to maintain a reliable water supply for current and future beneficial uses without experiencing undesirable results. As such, over its projected 38-year lifetime (2 years of construction, 35 years of operation, and 1 year of decommissioning), the Project would require an average of 64 acre-feet (AF) of water per year. In comparison with water use assumed in the GSP for existing land uses (1,113 AF per year for irrigation of hay and grain crops), the Project's water demand represents a small portion (approximately 6 percent) of annual water use under existing conditions accounted for in the GSP. If considering only water demand for operation (approximately 31 AF per year), this equates to less than 3 percent of annual water use accounted for in the GSP. Therefore, development of the Project would use significantly less water than the GSP assumes for the Project site. Accordingly, Project development could accelerate sustainable groundwater conditions in the Pleasant Valley Subbasin.

Finally, the applicant would be required to prepare and submit a Reclamation Plan prior to the issuance of building permits, and to implement the County-approved Reclamation Plan upon Project decommissioning, as required by the County's Solar Facility Guidelines. The Reclamation Plan is required to specify the termination date of the solar use and the timeline for removal of all above-grade and below-grade improvements, and to detail the specific measures to reclaim the site to its previous agricultural condition, including types of crops to be planted. Implementation of the Reclamation Plan is guaranteed by the posting of performance bonds or other forms of financial surety. Therefore, the Project would not commit the land to permanent conversion to non-agricultural uses. In fact, the Project would accomplish the opposite by allowing for accessory agricultural use during Project operation and by restoring site conditions for the resumption of agricultural use as the primary land use.

For all of these reasons, separately and collectively, the Project would not result in a significant adverse impact related to conversion of Prime farmland to non-agricultural use.

Mitigation: None required.

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

The Project site is designated as Agricultural and is located within the AE zoning district by the Fresno County Zoning Ordinance. The AE zoning district is intended to be an exclusive agricultural district and for uses integral to an agricultural operation. The zoning designation does not specifically allow for solar and ESS facilities; however, the proposed uses may be permitted in any zone district, subject to consideration and approval by Fresno County of an unclassified CUP. The purpose of this process is to make a use that is not permitted by right conditioned to ensure compatibility with the agricultural district and the intended uses therein. Additionally, the Project would be reviewed for consistency with the County's Solar Facility Guidelines as part of the CUP process, which includes guidelines specific to agricultural resources (see Appendix K). With approval of the CUP, there would be no conflict with agricultural zoning for the solar facility and ESS. (*No Impact*)

Impact 3.3-2: The Project would not conflict with existing Williamson Act contracts. (*Less-than-Significant Impact*)

The entire Project site consists of parcels subject to Williamson Act agricultural preserve contracts (refer to Table 2-1 for APNs, addresses, and Williamson Act contract numbers). As described in Section 2.7.3, the Project would continue agricultural uses on the site by grazing sheep within and surrounding the proposed solar photovoltaic panels and equipment to manage vegetation growth. However, the County has determined that the Project as a whole is not compatible with the Williamson Act program because the Project would significantly displace or impair current agricultural operations on currently contracted lands within the Project site for the duration of the CUP period. Therefore, development of the Project site for the proposed use would require the property owner(s) petition for cancellation of the Williamson Act contracts by making the public interest findings, or other applicable findings. Cancellation of a Williamson Act contract is an option under limited circumstances and conditions as set forth in California Government Code Section 51280. The Fresno County Board of Supervisors would consider the Applicant's petition for cancellation of the Williamson Act contracts concurrent with the consideration of the necessary land use approvals, and review all information and data provided to determine if the findings can be made and the cancellation can be granted. Therefore, once all the findings have been satisfied, Fresno County could approve the Petition for Cancellation of Contract. As such, the Applicant would be obligated to pay a Williamson Act contract cancellation fee as determined by the County, which would be required as a Condition of Approval of the proposed CUP. With the payment of the cancellation fee, the contract cancellation process would be completed. Upon approval of the Petition for Cancellation of Williamson Act Contracts and payment of the cancellation fee, there would be no conflict with existing Williamson Act contracts on the Project site. As a result, the proposed solar facility and ESS would have a less-than-significant impact related to a conflict with an existing Williamson Act contract.

Mitigation: None required.

Criterion c) Whether the Project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220[g]), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104[g]).

The Project site does not contain any forest land (as defined by Public Resources Code §12220[g]), timberland (as defined by Public Resources Code §4526), or land zoned Timberland Production (as defined by Government Code §51104[g]). The Project site is within the AE zoning district and the Project would not require a change to that designation. Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, and no impact would occur 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 3.3.1.2, *Environmental Setting*, the Project site does not contain any mature trees or forest land. The site has historically been used for agricultural purposes. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use and no impact would occur 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.

The Project is not proposed on forest land; therefore, no conversion of forest land to non-forest use would occur with implementation of the Project. No impact would occur with respect to forest conversion. (*No Impact*)

Impact 3.3-3: 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. (*Less-than-Significant Impact*)

The Project would involve direct and indirect changes to Farmland. Conversion of the site from Prime Farmland would directly result in decreased agricultural production on the Project site. As described in Section 3.3.1.2, *Environmental Setting*, and detailed in the LESA (Appendix D), the zone of influence contains a mixture of Farmland of Local Importance and Prime Farmland across approximately 2,870 acres. Thirteen parcels in the zone of influence are located on Williamson Act–contracted land, comprising approximately 5,893 acres. Direct effects would be limited to the parcels within the Project site. The Project would limit indirect effects on the surrounding farmland because the Project design allows for a 50-foot buffer between Project components and neighboring agricultural operations (consistent with the Fresno County Solar Guidelines). Most of the parcels designated as Farmland in the Project vicinity are also under Williamson Act contracts. These parcels would be required to remain in agricultural use for at least a 10-year period unless the landowners petition for cancellation of the contracts, subject to approval by the County Board of Supervisors, or otherwise ensure compatibility with

agricultural operations. Conversion of these parcels to non-agricultural use would therefore require further discretionary review and approval but such actions would be speculative to assume at this time, as there are no pending applications. Furthermore, the Project would make no other changes to the existing environment that would affect the defining characteristics of off-site Farmland, such as soil quality or water availability. Therefore, the Project would not directly cause or indirectly result in conversion of surrounding Farmland to non-agricultural use. The resulting impact would be **less than significant**.

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

The Pacific Gas and Electric Company (PG&E) switching station would not be located on lands mapped as Prime Farmland. Therefore, construction of the PG&E infrastructure alone would not convert Prime Farmland to a non-agricultural use; there would be no conversion of Prime Farmland to a non-agricultural use, and no direct impacts on Farmland would occur. Fresno County Code §804.1.030 allows exemptions for land use permit requirements for uses including the alteration, construction, erection, or maintenance of electric utilities by a public utility. Therefore, there would be no conflict with agricultural zoning for the proposed PG&E infrastructure. For these reasons, there would be **no impact** with respect to criteria a), b), c), and d).

The Project's proposed PG&E switching station and associated generation-tie line are electric facilities and, as such, their presence would be compatible with the existing Williamson Act contract pursuant to Government Code §51238(a). Therefore, the proposed PG&E infrastructure would have a **less-than-significant** impact related to a conflict with an existing Williamson Act contract. Similar to the solar facility and ESS, the PG&E infrastructure would support a solar facility located adjacent to Farmland but would result in the same **less-than-significant** indirect impact related to conversion of off-site Farmland to non-agricultural use for the reasons described above, with respect to criterion e).

Mitigation: None required.

3.3.4 Cumulative Analysis

The Project would have no impact related to a conflict with existing zoning for, and would not cause rezoning of, forest land, timberland, or timberland zoned Timberland Production; it also would have no impact related to a loss of forest land or the conversion of forest land to non-forest use, as addressed in criteria c) and d) above. Therefore, the Project would cause no impact that could cause or contribute to cumulative impacts on these resources. (*No Impact*)

Impact 3.3-4: The Project would not cause a cumulatively considerable contribution to a significant cumulative effect due to conversion of Farmland to non-agricultural use. (*Less-than-Significant Impact*)

The geographic context for potential cumulative impacts related to conversion of Farmland to non-agricultural use consists of Farmland mapped by the FMMP as Prime Farmland because this is the only mapping category that would be affected by the Project. The temporal context for potential cumulative impacts related to the conversion of Prime Farmland would be limited to the Project's construction and operation and maintenance phases because Project decommissioning and site restoration would return the site to a condition suitable for continued agricultural use.

Ongoing impacts of past projects on agricultural resources are reflected in the environmental setting and specifically include the conversion of Prime Farmland to solar facilities and other renewable energy development in the region:

- The Fresno County General Plan EIR identified a significant and unavoidable impact related to conversion of Farmland at buildout under the General Plan (Fresno County 2023a).
- The Fifth Standard Solar Project Complex and Key Energy Storage project are located on Prime Farmland (DOC 2024a). The EIR prepared for the Fifth Standard Solar Project Complex found significant and unavoidable impacts with respect to pressures to convert farmland to nonagricultural 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).
- The EIR prepared for the Key Energy Storage project found less-than-significant impacts related to the project's contribution to cumulatively significant effects because the project would not result in impacts on soils that would permanently convert Farmland (Fresno County 2023b).

As analyzed in the context of Impact 3.3-1, the Project would have a potential significant impact related to the conversion of Prime Farmland to non-agricultural use during the operational life of the Project.[4] Collectively, the incremental impacts of the Project, when combined with the incremental impacts of the past, present, and reasonably foreseeable future projects, would result in a significant cumulative impact related to the conversion of Farmland to non-agricultural use.

However, while the repurposing of the land would temporarily remove it from agricultural production, it would not commit the land to permanent conversion to non-agricultural uses. The Project would increase the potential groundwater recharge to the subbasin, consistent with the Pleasant Valley Groundwater Sustainability Management Plan. This would be beneficial to the larger region. Additionally, the Project's decommissioning and site reclamation requirements would enable the site to return to conditions suitable for primary agricultural use. Therefore, the Project would not result in a significant cumulative impact related to conversion of Prime farmland to non-agricultural use.

Mitigation: None required.

Impact 3.3-5: The Project would not cause a cumulatively considerable contribution to a significant cumulative effect related to an existing Williamson Act contract. (*Less-than-Significant Impact*)

Fresno County describes the Williamson Act as "a means to restrict the uses of agricultural and open space lands to farming and ranching uses during the length of the contract period. The Williamson Act Program was also envisioned as a way for local governments to integrate the protection of open space and agricultural resources into their overall strategies for planning urban growth patterns" (Fresno County 2024d).

Given Fresno's countywide focus in implementing the program, the geographic context for this analysis of potential cumulative impacts related to a conflict with an existing Williamson Act contract includes the approximately 1,444,107 acres of farmland in the county that are under Williamson Act contracts (Fresno County 2023c). The Fresno County General Plan EIR identified a significant and unavoidable impact

[4] Although sheep grazing would occur on site for the life of the Project, the grazing would be an accessory use.

related to conflicts with existing Williamson Act contracts at buildout under the General Plan (Fresno County 2023a).

As discussed under Impact 3.3-2, the entire Project site is located on parcels subject to Williamson Act agricultural preserve contracts. While the Project would include cancellation of the Williamson Act contracts on the Project site, the cancellation of these contracts would represent less than 0.20 percent of the contracted land in the County. Relative to the number of contracted acres in the County, the Project's removal of 2,955.4 acres would not be cumulatively considerable. Further, adjacent agricultural uses would not be adversely affected by the Project site's renewable energy use, and the Project site itself could be returned to agricultural use after decommissioning and reclamation. Thus, cancellation of Williamson Act contracts on the Project site would not affect the County's integration of the protection of open space and agricultural resources into its overall strategies for planning urban growth patterns. For these reasons, the Project's incremental contribution would not be cumulatively considerable and therefore less than significant.

Mitigation: None required.

Impact 3.3-6: The Project would not result in a cumulatively considerable contribution to a significant cumulative effect involving changes in the existing environment, which could result in conversion of Farmland to non-agricultural use. (*Less-than-Significant Impact*)

The Project site and multiple adjacent and nearby parcels are mapped as Farmland as part of the FMMP. The Project could contribute a less-than-significant incremental impact to the cumulative impact of conversion caused by past projects (as described in Section 3.3.1.2, *Environmental Setting*) and other present and reasonably foreseeable future projects during the Project's construction and operation and maintenance periods. The Fifth Standard Solar Project Complex and Key Energy Storage Project are located on Prime Farmland (DOC 2024a). The Fresno County General Plan EIR identified a significant and unavoidable impact related to conversion of Farmland related to buildout under the General Plan (Fresno County 2023a). 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). This analysis assumes that a significant adverse cumulative impact exists as a result Farmland conversion caused primarily by development pressure and water scarcity.

The Project's incremental, less-than-significant impact would not make a cumulatively considerable contribution to cumulative impacts related to the conversion of farmland for two reasons: (1) The site characteristics that qualify it as Farmland would be restored to conditions suitable for continued agricultural use upon Project decommissioning; and (2) the Project would preserve the future agricultural use of the site as described above in Impact 3.3-1, and would continue accessory agriculture use during operation through the use of sheep grazing. There would be no ongoing Project-caused contribution to cumulative effects after decommissioning because the characteristics that qualify the site as Prime Farmland would be restored or retained and agricultural use of the site could resume. The Project's incremental impact would be less than cumulatively considerable, and therefore less than significant.

Mitigation: None required.

Because the PG&E Improvements would cause no impacts related to forestland or timberland, conversion of prime farmland, or conflicts with agricultural zoning, and would have less than significant impacts related to Williamson Act contract compatibility and conversion of off-site lands to non-agricultural uses, the PG&E Improvements would not cause or contribute to any cumulative impacts.

3.3.5 References

Delta Protection Commission. 2020. *The State of Delta Agriculture: Economic Impact, Conservation and Trends*. West Sacramento, CA. Prepared by Center for Business and Policy Research, University of the Pacific, and Geographical Information Center, California State University, Chico. February 3, 2020. Available: https://delta.ca.gov/wp-content/uploads/2020/07/Ag-ESP-update-agricultural-trends-FINAL-508.pdf. Accessed September 20, 2024.

DOC (California Department of Conservation). 2022. *Williamson Act Cancellation Process: Guide for Local Governments*. Division of Land Resource Protection. Revised July 2022. Available: https://www.conservation.ca.gov/dlrp/wa/Documents/WA%20Cancellation%20Process%20Guide.pdf. Accessed September 22, 2024.

DOC (California Department of Conservation). 2024a. California Important Farmland Finder. Available: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed September 20, 2024.

DOC (California Department of Conservation). 2024b. "Important Farmland Categories." Available: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx. Accessed September 22, 2024.

DOC (California Department of Conservation). 2024c. "Farmland Mitigation." Available: https://www.conservation.ca.gov/dlrp/grant-programs/mitigation/Pages/FarmlandMitigation.aspx. Accessed September 22, 2024.

DWR (California Department of Water Resources). 2024. CADWR Land Use Viewer, Statewide Cropping 2019–2022. Available: https://gis.water.ca.gov/app/CADWRLandUseViewer/?page=home. Accessed September 20, 2024.

Fresno County. 2017. *County of Fresno Solar Facility Guidelines*. Revised by Board of Supervisors on December 12, 2017. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities/photovoltaic-facilities-p-1621. Accessed September 22, 2024.

Fresno County. 2020. *Fifth Standard Solar Project Complex Draft Environmental Impact Report*. No. 7257, State Clearinghouse No. 2017091038. February 2020.

Fresno County. 2023a. *Fresno County General Plan Review and Zoning Ordinance Update, Program Environmental Impact Report, Public Review Draft*. SCH #2018031066. April 2023. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/1_draft-program-environmen-1.pdf. Accessed September 21, 2024.

Fresno County. 2023b. *Key Energy Storage Project Draft Environmental Impact Report*. EIR No. 8189, CUP No. 3734, State Clearinghouse No. 2022070414. Prepared by Environmental Science Associates. September 2023.

Fresno County. 2023c. *Fresno County General Plan Background Report*. Public Review Draft. April 2023. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr-background-report-2023-05-10.pdf. Accessed September 21, 2024.

Fresno County. 2024a. *Fresno County General Plan Policy Document*. Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed September 20, 2024.

Fresno County. 2024b. County of Fresno—Zoning. Available: https://gisportal.co.fresno.ca.us/portal/apps/webappviewer/index.html?id=b921843d343d4df998b5b3c6a301756a. Accessed September 20, 2024.

Fresno County. 2024c. Fresno County Zoning Ordinance (Zoning Ordinance Update). February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/3/public-works-and-planning/zoning-ordinance/zoning-ordinance-final.pdf. Accessed September 21, 2024.

Fresno County. 2024d. "California Land Conservation Act." Available: https://www.fresnocountyca.gov/Departments/Assessor/Williamson-Act. Accessed September 21, 2024.

Teague, W.R., and M. Barnes. 2017. "Grazing Management that Regenerates Ecosystem Function and Grazingland Livelihoods." *African Journal of Range & Forage Science* 34(2):77–86. DOI: 10.2989/10220119.2017.1334706. Available: https://www.researchgate.net/profile/Wr-Teague/publication/318431266_Grazing_management_that_regenerates_ecosystem_function_and_grazingland_livelihoods/links/5a547641a6fdccf3e2e2e762/Grazing-management-that-regenerates-ecosystem-function-and-grazingland-livelihoods.pdf. Accessed September 21, 2024.

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3.4 Air Quality

This section identifies and evaluates issues related to air quality planning and conditions, including those pertaining to criteria pollutants and the exposure of sensitive receptors to substantial pollutant concentrations, odors, and other emissions. 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 requested that emissions from construction and operation of the Project be identified, quantified, and compared to significance thresholds. Specifically, details should be provided about activities that would cause sensitive receptors to be exposed to pollutant emissions, including from diesel exhaust, and if emissions exceed 100 pounds per day (lb/day) of any pollutant, an ambient air quality analysis should be performed (Appendix A, *Scoping Report*). SJVAPCD also provided other recommendations, such as that if significant impacts associated with criteria pollutants are identified, the EIR should discuss implementation of a Voluntary Emission Reduction Agreement for the Project. The County reviewed and considered this input in preparing the Draft EIR.

This analysis is based in part on the Project-specific *Cornucopia Hybrid Project: Air Quality and Greenhouse Gas Technical Report* (AQ and GHG Technical Report) prepared by Rincon Consultants (2025) (**Appendix E.1**). The preparers of this Draft EIR independently reviewed the AQ and GHG Technical Report (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.

3.4.1 Setting

3.4.1.1 Study Area

The Project site is in the San Joaquin Valley Air Basin (SJVAB) and is within the jurisdictional boundaries of SJVAPCD, which has jurisdiction over San Joaquin Valley, including Fresno County. The SJVAB is approximately 250 miles long and 35 miles wide (on average) and is bordered by the Coast Ranges on the west, the Sierra Nevada on the east, and the Tehachapi Mountains to the south. On the valley floor, the SJVAB is open only to the north, which heavily influences prevailing winds (SJVAPCD 2015a).

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

3.4.1.2 Environmental Setting

Criteria Air Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants and has set National Ambient Air Quality Standards (NAAQS) for widespread pollutants from numerous and diverse sources that are a threat to public health and welfare. USEPA has set NAAQS for the following seven principal pollutants, which are called "criteria" pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). The State of California has established the California Ambient Air Quality Standards (CAAQS) for these criteria pollutants, as well as ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The criteria air pollutants that are a concern in the SJVAB are discussed below.

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 oxides of nitrogen (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 (i.e., 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.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and 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 volatile organic compounds (VOC) and NO_x. VOC is also referred to as reactive organic gases (ROG) by the California Air Resources Board (CARB). ROG 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 VOC and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when conditions such as long sunny days and regional subsidence inversions are conducive to the formation and accumulation of secondary photochemical compounds.

Carbon Monoxide

CO is a nonreactive pollutant that is a product of incomplete combustion and is associated mostly 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 process reduces the amount of oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Particulate Matter

PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that 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, while others, such as vehicular traffic, have a more regional effect. Particulates can damage materials and reduce visibility. 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. Annually, 7,300–11,000 premature cardiopulmonary deaths in California are estimated to be associated with exposures to particulate matter (CARB 2010).

Sulfur Dioxide

SO_2 is a colorless acidic gas with a pungent odor produced by the combustion of sulfur-containing fuels, such as oil, coal, and diesel. It has the potential to damage materials and cause health effects at high concentrations. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Toxic Air Contaminants

According to §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 that may have adverse effects on human health or the environment, calling them TACs. CARB classified "particulate emissions from diesel-fueled engines" (i.e., diesel particulate matter [DPM]) (California Code of Regulations Title 17, §93000) as a TAC in August 1998. 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 for trucks, buses, and cars and off-road diesel engines for locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70 percent of all airborne cancer risk in California is associated with DPM.

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 2–3 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 Valley Fever per 100,000 people, Fresno County is considered "highly endemic" (CDIR 2024), and western Fresno County is considered an area of elevated Valley Fever activity (Fresno County 2024a). 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 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 contracting Valley Fever (CDC 2024a; Fresno County 2024a). High winds can carry dust containing the spores for 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 the prioritization of Valley Fever research by the National Institutes of Health and the Centers for Disease Control and Prevention, no vaccine exists to protect humans from Valley Fever (CDC 2024b). 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 2024a).

The number of cases of Valley Fever in Fresno County has varied over the past several years. Between 2018 and 2021, the total number of cases decreased from 660 to 436. In 2022, the number of total cases rose to 469 (FCDPH 2024). 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 2024b).

Sensitive Receptors

Some people are considered more sensitive than others to air pollutants. Reasons for greater than average sensitivity include age, preexisting health conditions, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered 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 than 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 because of the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. 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 to the Project site are (1) the residences adjacent to the southeastern corner of the Project property line, within the Lost Hills neighborhood, which would be approximately 250 feet from construction activity; and (2) a single-family residence off State Route 33 that would be approximately 750 feet from construction activity.

Existing Air Quality

SJVAPCD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants. Existing and probable future levels of air quality in the SJVAB can be inferred from ambient air quality measurements conducted by SJVAPCD at its monitoring stations. The major criteria pollutants of concern in the SJVAB—ozone, NO_2, PM_{10}, and $PM_{2.5}$—are monitored at multiple locations and associated air quality data statistics are posted online by CARB. Pollutant emissions, topography, and meteorological conditions for a given area determine the background ambient concentrations of pollutants. As a result, background concentrations can vary among different locations within Fresno County. However, areas that are located close together with similar topography and are 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 Hanford–S. Irwin Street monitoring station at 807 S. Irwin Street, located approximately 35 miles northeast of the Project site, which monitors ozone, $PM_{2.5}$, PM_{10}, and NO_2. 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 in California and CARB no longer posts air quality data statistics online for those pollutants.

Table 3.4-1 shows a 3-year summary of ozone, $PM_{2.5}$, PM_{10} and NO_2 data collected at the Hanford–S. Irwin Street monitoring station. The table also compares these data to the NAAQS and CAAQS, which are presented in more detail in Table 3.4-2. As shown in Table 3.4-1, the state/national 1- and 8-hour ozone standards, the state/national 24-hour $PM_{2.5}$ standard, and the state/national 24-hour PM_{10} standard were exceeded on multiple days between 2021 and 2023.

TABLE 3.4-1
AIR QUALITY DATA SUMMARY (2021–2023) FOR THE PROJECT AREA

Pollutant	Standard	Monitoring Data by Year		
		2021	2022	2023
Ozone				
Highest 1-Hour Average, ppm		**0.102**	0.091	0.091
Days over State Standard	0.09 ppm	2	0	0
Highest 8-Hour Average, ppm		**0.095**	**0.081**	**0.083**
Days over State/National Standards [a]	0.070 ppm	4/16	3/12	5/11
Fine Particulate Matter, $PM_{2.5}$				
Highest 24-Hour Average, µg/m^3		**81.0**	**62.9**	**54.4**
Measured days over National Standard Exceedances/Samples	35 µg/m^3	31	27	11
Annual Average, µg/m^3		15.6	14.2	12.5
Exceed State Standards?	12 µg/m^3	Yes	Yes	Yes
Particulate Matter, PM_{10}				
Highest 24-Hour Average		**175.0**	**250.8**	**157.3**
Measured Days over State Standard	50 µg/m^3	146	141	114
Measured Days over National Standard	150 µg/m^3	2	1	1
State Annual Average	20 µg/m^3	**52.8**	**49.9**	**44.2**

Pollutant	Standard	Monitoring Data by Year		
		2021	2022	2023
Nitrogen Dioxide (NO_2)				
Highest 1-Hour Average		0.051	0.045	0.055
Days over State Standard	0.18 ppm	0	0	0
Days over National Standard	0.100 ppm	0	0	0
State/National Annual Average	0.030/0.053 ppm	0.008	0.008	0.006

Notes: $\mu g/m^3$ = micrograms per cubic meter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; ppm = parts per million

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.

a. In October 2015, the U.S. Environmental Protection Agency implemented a new national 8-hour ozone standard of 70 parts per billion (or 0.070 ppm).

* Insufficient data available to determine the value.

Source: CARB 2024a

3.4.1.3 Regulatory Setting

Federal

The 1970 Clean Air Act (CAA) (most recently amended in 1990) requires that regional planning and air pollution control agencies prepare regional air quality plans. The plans must outline the measures by which both stationary and mobile sources of pollutants will be controlled to achieve all ambient air quality 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 adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weakened 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 before adverse health effects are observed. **Table 3.4-2** presents the current NAAQS and CAAQS and the SJVAB's attainment status relative to those standards.

By law, USEPA must set the NAAQS at levels that are requisite to protect public health. Therefore, the closer a region is to attaining a particular ambient air quality standard, the lower the human health impact is from that pollutant. See Section 3.4.1.2, *Environmental Setting*, for a brief description of the health effects of exposure to criteria air pollutants. Pursuant to the 1990 federal CAA Amendments, USEPA classifies air basins (or portions thereof) as "attainment," "non-attainment," or "unclassified" for each criteria air pollutant, based on whether the national standards have been achieved. An "unclassified" designation indicates that air quality and other relevant information is insufficient to determine whether the area is attainment or non-attainment. As shown in Table 3.4-2, SJVAB is currently classified as non-attainment for the national 8-hour ozone and 24-hour $PM_{2.5}$ standards. All other criteria pollutants in the SJVAB are classified as attainment or unclassified relative to the federal standards.

TABLE 3.4-2
AMBIENT AIR QUALITY STANDARDS AND AIR BASIN ATTAINMENT STATUS

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

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million
Source: SJVAPCD 2024a.

State

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state. PG&E's work (as regulated by the commission) would not be subject to the County's air quality-related requirements. However, the California Public Utilities Commission's General Order No. 131-E, §XI.B, would require PG&E to "consult with local agencies regarding land use matters," potentially including the impact on air quality on sensitive receptors.

California Clean Air Act and Ambient Air Quality Standards

Although the federal CAA established the NAAQS, individual states retain the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological challenges in California, there are differences between the national and state ambient air quality standards. The current CAAQS are shown in Table 3.4-2. Most of the CAAQS are at least as protective as the NAAQS.

The NAAQS and CAAQS have been set at levels considered safe to protect the public, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. As explained by CARB, "an air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment" (CARB 2024b). That is, if a region is in compliance with the ambient air quality standards, its regional air quality can be considered protective of public health.

The California CAA (California Health and Safety Code §39600 et seq.), like its federal counterpart, calls for designation of areas as "attainment," "non-attainment," or "unclassified" with respect to the CAAQS. The SJVAB is currently designated as non-attainment for the following CAAQS: 1-hour and 8-hour ozone, the 24-hour and annual average PM_{10}, and the 24-hour and annual average $PM_{2.5}$. The SJVAB is designated as attainment or unclassified with respect to the other state standards.

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code §39614, to reduce public exposure to PM_{10} and $PM_{2.5}$. SB 656 required CARB, in consultation with local air districts, to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM_{10} and $PM_{2.5}$ (referred to collectively as "PM"). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for $PM_{2.5}$ and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal $PM_{2.5}$ attainment plans, as well as for state ozone plans. This ensures continuing focus on PM reduction and progress toward attaining California's more health protective standards. The list of air district control measures was adopted by CARB on November 18, 2004.

Diesel Risk Reduction Plan

To reduce the cancer risk associated with DPM, CARB adopted the Diesel Risk Reduction Plan in 2000 (CARB 2000). The comprehensive diesel risk reduction plan aims to mitigate the adverse health effects associated with DPM emissions. The plan encompasses various strategies, including stricter emission standards for new diesel engines, promotion of low-sulfur fuel, and retrofitting existing engines with emission control devices. These measures have contributed to a substantial reduction in PM emissions in the state.

Off-Road Diesel Emissions

The CARB In-Use Off-Road Diesel-Fueled Fleets Regulation applies to all self-propelled off-road diesel vehicles 25 horsepower or greater used in California and to most two-engine vehicles (except on-road two-engine sweepers). This includes vehicles that are rented or leased. CARB's goal is to gradually reduce the statewide construction vehicle fleet's emissions through turnover, repowering, or retrofits. New engine emissions requirements were grouped into tiers based on the year in which the engine was built. In 2014, new engines were required to meet Tier 4 Final standards which, to date, are the most stringent emissions standards for off-road vehicle engines. The goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce particulate matter (PM_{10} and $PM_{2.5}$) and NO_X emissions from off-road heavy-duty diesel vehicles in California (CARB 2024c). This regulation also limits idling to 5 minutes, requires a written idling policy for larger vehicle fleets, and requires that fleet operators provide information on their engines to CARB and label vehicles with a CARB-issued vehicle identification number.

Air Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to DPM emissions (California Code of Regulations Title 13, §2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also reduces greenhouse gas emissions and saves energy by reducing fuel consumption from unnecessary idling.

Valley Fever

On October 11, 2019, Assembly Bill 203 was enacted to add §6709 to the Labor Code, relating to occupational safety and health. This bill requires construction employers that engage in specified work activities or vehicle operation in counties where Valley Fever is highly endemic, such as Fresno County, to provide effective awareness training on Valley Fever to all employees annually and before employees begin work that is reasonably anticipated to cause substantial dust disturbance. Therefore, Assembly Bill 203 would be applicable to Project work conducted within Fresno County. The law requires that the training cover specific topics and authorizes inclusion of the training in the employer's injury and illness prevention program training or as a standalone training program. The training must include the following topics:

(1) What Valley Fever is and how it is contracted.

(2) High-risk areas and types of work and environmental conditions during which the risk of contracting Valley Fever is highest.

(3) Personal risk factors that may create a higher risk for some individuals.

(4) Personal and environmental exposure prevention methods.

(5) The importance of early detection, diagnosis, and treatment to help prevent the disease from progressing.

(6) Recognizing common signs and symptoms of Valley Fever.

(7) The importance of reporting symptoms to the employer and seeking medical attention from a physician and surgeon for appropriate diagnosis and treatment.

(8) Common treatment and prognosis for Valley Fever.

Local

Fresno County 2024 General Plan

The Fresno County General Plan (Fresno County 2024b) outlines several policies intended for the improvement of air quality and reduction of air emissions within the county. The following goal and policies are applicable to the Project:

> **Goal OS-G:** To improve air quality and minimize the adverse effects of air quality pollution in Fresno County.
>
> > ***Policy OS-G.13 Valley Fever Mitigation:*** The County shall continue to promote public awareness of Valley Fever risks relating to ground disturbing activities through the provision of educational materials, webpages and resource contact information. For projects involving

ground disturbance on unpaved areas left undisturbed for 6 months or more, the County shall require developers to provide project-specific Valley Fever training and training materials.

Policy OS-G.14 Fugitive Dust Control Measures: The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the 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.16 Roadway Dust Control: The County shall continue to work to reduce PM_{10} and $PM_{2.5}$ emissions from County maintained roads by considering shoulder treatments for dust control as part of road reconstruction projects.

San Joaquin Valley Air Pollution Control District

The Project site is located within the jurisdiction of SJVAPCD, which regulates air pollutant emissions for all sources throughout the SJVAB other than motor vehicles. 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) contains rules developed pursuant to USEPA guidance for "serious" PM_{10} non-attainment areas. Rules included under this regulation limit fugitive PM_{10} emissions from the following sources: construction, demolition, excavation, extraction, and other earthmoving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources. **Table 3.4-3** contains applicable control measures to implement during construction activities for the Project pursuant to Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities).

Rule 2201 (New and Modified Stationary Source Review Rule) applies to all new stationary sources or modified existing stationary sources that are subject to the SJVAPCD permit requirements. The rule requires review of the new or modified stationary source to ensure that the source does not interfere with the attainment or maintenance of ambient air quality standards.

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

Rule 4102 (Nuisance) prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public.

Rule 9510 (Indirect Source Review) requires certain development projects to mitigate exhaust emissions from construction equipment greater than 50 horsepower to 20 percent below statewide average NO_x emissions and 45 percent below statewide average PM_{10} exhaust emissions. This rule also requires applicants to reduce baseline emissions of NO_X and PM_{10} emissions associated with operations by 33.3 percent and 50 percent, respectively, over a period of 10 years. If the project results in a mitigated baseline below 2 tons per year of NO_X and PM_{10} emissions, it is exempt from general mitigation requirements and off-site emission reduction fees. The Project does not qualify for this exemption.

TABLE 3.4-3
SJVAPCD RULE 8021 AND CONTROL MEASURE OPTIONS FOR CONSTRUCTION, EXCAVATION, EXTRACTION, AND OTHER EARTHMOVING 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.
5 or 6	**Rule 8021 Measures**
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 (VDE) exceed 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 (APCO) prior to the start of any construction activity on any site that will include ten acres or more of disturbed surface area for residential developments, or five acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/ operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.
6.3.3	The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust-generating activity.
6.3.4	A Dust Control Plan shall contain all the [administrative] information described in Section 6.3.6 of this rule. The APCO shall approve, disapprove, or conditionally approve the Dust Control Plan within 30 days of plan submittal. A Dust Control Plan is deemed automatically approved if, after 30 days following receipt by the District, the District does not provide any comments to the owner/operator regarding the Dust Control Plan.

Source: SJVAPCD 2004

Air Quality Management Plans

As required by the federal and California CAAs, 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. SJVAPCD has approved air quality management plans demonstrating how the SJVAB will reach attainment of the state 1-hour and federal and state 8-hour ozone standards, and the state PM_{10} and $PM_{2.5}$ 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 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, USEPA published in the *Federal Register* the final action to determine that the SJVAB has attained the 1-hour ozone standard.

SJVAPCD adopted the *2016 Plan for the 2008 8-Hour Ozone Standard* in June 2016. This plan satisfies CAA 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. 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 Reasonably Available Control Technology.

The *2022 Plan for the 2015 8-Hour Ozone Standard* for the San Joaquin Valley outlines a comprehensive strategy to meet the 2015 8-hour ozone standard. This plan, adopted in December 2022, incorporates a range of measures to reduce emissions from various sources, including transportation, industry, and agriculture. Key components of the plan involve stricter emissions standards for vehicles, promoting cleaner fuels, and implementing incentive programs for businesses to adopt more environmentally friendly practices. Additionally, the plan emphasizes the importance of air quality monitoring and modeling to track progress and identify areas needing further attention (SJVAPCD 2022).

Particulate Matter Attainment Plans

Effective November 12, 2008, USEPA redesignated the SJVAB 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 micrograms per cubic meter, which was established by USEPA in 1997.

In April 2015, the SJVAPCD Board adopted the *2015 Plan for the 1997 $PM_{2.5}$ Standard*, which addresses USEPA's annual and 24-hour $PM_{2.5}$ standards established in 1997 after the SJVAB experienced higher $PM_{2.5}$ levels during the 2013/2014 winter due to the extreme drought, stagnation, strong inversions, and

historically dry conditions, and SJVAPCD was unable to meet the initial attainment date of December 31, 2015 (SJVAPCD 2015b).

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 $\mu g/m^3$, established in 2012. This plan includes an attainment impracticability demonstration and a request for reclassification of the SJVAB 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 nonregulatory measures including aggressive incentive-based control measures that achieve the emissions reductions needed to bring the area into attainment (SJVAPCD 2018).

The *2024 Plan for the 2012 Annual $PM_{2.5}$ Standard* was adopted on June 20, 2024. The plan was adopted to fulfill the remaining requirements of the CAA, including the final modeling analysis, attainment strategy and emission reduction commitments, reasonable further progress/quantitative milestones, and contingency measures. The goal of the plan is to bring the entire SJVAB into attainment of the 2012 $PM_{2.5}$ standards by 2030 (SJVAPCD 2024b).

3.4.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, the Project would result in a significant impact on air quality if it would do any of the following:

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 Impacts* (GAMAQI) includes one additional criterion. Consistent with SJVAPCD's guidance, the Project would result in a significant impact on 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 relative to the criteria discussed above, the SJVAPCD GAMAQI document has established emissions-based thresholds of significance for criteria air pollutants (SJVAPCD 2015a), which are shown in **Table 3.4-4**. SJVAPCD has the same significance thresholds for construction-related and operational emissions and recommends evaluating impact significance for these categories

separately. These thresholds of significance are based on a calendar-year basis, although construction emissions are assessed on a rolling 12-month period.

TABLE 3.4-4
SJVAPCD AIR QUALITY THRESHOLDS OF SIGNIFICANCE—CRITERIA AIR POLLUTANTS

Pollutant	Construction Emissions (tons per year)	Operational Emissions (tons per year)
CO	100	100
NOx	10	10
ROG	10	10
SOx	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

Notes: CO = carbon monoxide; NO_x = oxides of nitrogen; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_x = oxides of sulfur

Source: SJVAPCD 2015a

In addition to the annual SJVAPCD thresholds outlined above, SJVAPCD has published the *Ambient Air Quality Analysis Project Daily Emissions Assessment* guidance, which is summarized in Section 8.4.2, *Ambient Air Quality Screening Tools*, of SJVAPCD's GAMAQI document, adopted in March 2015. The *Ambient Air Quality Screening Tools* guidance provides a screening threshold of 100 lb/day of any of the following pollutants: NO_X, ROG, PM_{10}, $PM_{2.5}$, SO_X, and CO. The screening threshold is used to evaluate construction activities and operational activities separately. Per SJVAPCD's GAMAQI document, when assessing the significance of project-related impacts on local air quality, the impacts *may* be significant if on-site emissions from construction or operational activities exceed the 100 lb/day screening level after implementation of all enforceable mitigation measures. If the screening threshold is exceeded for any pollutant, an ambient air quality analysis (AAQA) should be conducted following District Rule 2201 (AAQA Modeling) for any phase that has an exceedance (SJVAPCD 2014). An AAQA uses air dispersion modeling to determine whether emission increases from a project's construction or operational activities would cause or contribute to a violation of the ambient air quality.

SJVAPCD recommends comparing a project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that would substantially contribute to an exceedance of the thresholds of significance. The Project would result in a less-than-significant impact on localized CO concentrations if either of the following would occur (SJVAPCD 2015a):

- 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 F.
- A traffic study indicates that the project would substantially worsen an already existing LOS F on one or more streets at more one or more intersections in the project vicinity.

However, SB 743, which was signed into law in 2013, initiated an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA. LOS is no longer considered an

ideal metric for evaluating transportation impacts. Therefore, for the purposes of this analysis, impacts related to localized CO concentrations are discussed qualitatively.

3.4.3 Direct and Indirect Effects

3.4.3.1 Methodology

This section presents the methodology used for the analysis of the Project's construction, operational, and decommissioning emissions. Criteria pollutants for Project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1. The input data and construction and operation emission estimates for the Project are discussed below and provided in Appendix A of the AQ and GHG Technical Report, which is included as Appendix E.1 of this EIR.

Construction and Decommissioning Emissions

Construction emissions of criteria air pollutants would be generated by construction equipment used on-site and by worker and vendor vehicle trips to and from the construction site.

Construction equipment was estimated to operate between 2 and 8 hours per day, with the exception of generator sets, which were assumed to operate 24 hours per day as a conservative assumption. Construction equipment inputs in CalEEMod used default horsepower information and load factors. Construction is expected to occur Monday through Friday from 6:00 a.m. to 6:00 p.m. Although construction activity could occur daily over a 12-hour period, it is unlikely that any diesel-powered equipment would operate for more than 8 hours per day. Based on the Project-specific water supply assessment prepared for the Project, construction would require approximately 1,080 acre-feet (351,972,000 gallons) of water for dust suppression over the course of the construction period (Rincon Consultants 2025). Vendor and haul trips were modeled as exclusively heavy heavy-duty truck trips. The Project is anticipated to generate a maximum of 1,200 daily vehicle trips (600 round trips) between workers and deliveries of equipment during the peak phase of construction, which would be the photovoltaic array installation. This analysis assumes that the Project would comply with all applicable regulatory standards, including SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions), Rule 2201 (New and Modified Stationary Source Review Rule), and Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities).

At the end of the useful life of the Project (anticipated to be 35 years), the Project would be decommissioned. Decommissioning and site restoration would consist of the removal of all aboveground and belowground structures and the restoration of topsoil, where applicable. Because decommissioning would occur a minimum of 35 years from the beginning of operations, the exact nature of the decommissioning activities and the equipment used is unknown. However, based on equipment, hauling, and labor estimates found in the Project's reclamation plan, decommissioning emissions were quantified using CalEEMod. CalEEMod does not include emission factors for years beyond 2050; therefore, it was assumed that decommissioning would occur over 12 months in 2050. Because of the increasing efficiency of vehicles, it is anticipated that the actual decommissioning activities would result in fewer emissions than are projected in this analysis.

Operational Emissions

CalEEMod estimates operational emissions of criteria pollutants primarily for area, energy, and mobile sources. The first full year of operation is assumed to be 2030. The energy storage system (ESS) facility was modeled as 50,000 square feet of refrigerated warehouses to account for the energy and refrigerant requirements for maintaining a stable temperature for optimum battery effectiveness, although this energy consumption is anticipated to be offset by the power generated at the site.

CalEEMod defaults were conservatively used to estimate emissions from annual architectural coating and use of consumer products for the site. The Project would not involve the consumption of natural gas. The solar plant portion of the Project would not involve consumption of electricity from the grid during operation. Instead, on-site electrical needs from the solar portion of the Project would be generated by the Project and no connection to the grid for operational use would be necessary.

In addition, Project operation is estimated to require approximately 30.97 acre-feet (10,091,604 gallons) per year for panel washing, dust control, and other uses.

3.4.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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

Impact 3.4-1: The Project could conflict with or obstruct implementation of the applicable SJVAPCD air quality plans. (*Less than Significant with Mitigation Incorporated*)

The construction, operation, and decommissioning of the Project would result in emissions of criteria air pollutants, including ozone precursors (such as ROG and NOx) and PM, that could potentially conflict with the local air quality plan. SJVAPCD has prepared several air quality attainment plans to achieve ozone and PM standards, the most recent of which include the *2022 Plan for the 2015 8-Hour Ozone Standard, 2020 Reasonably Available Control Technology (RACT) Demonstration for the 2015 8-Hour Ozone Standard* and the *2016 Plan for the 2008 8-Hour Ozone Standard, 2007 PM_{10} Maintenance Plan and Request for Re-designation, 2012 $PM_{2.5}$ Plan, 2015 Plan for the 1997 $PM_{2.5}$ Standard,* and *2024 Plan for the 2012 Annual $PM_{2.5}$ Standard*. 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 3.4.1.3, *Regulatory Setting.*

As stated in the AQ and GHG Technical Report, per Section 7.12 of the GAMAQI document, SJVAPCD has determined that projects with emissions exceeding the thresholds of significance for criteria pollutants would conflict with or obstruct implementation of SJVAPCD's air quality plans (SJVAPCD 2015a). As discussed under Impact 3.4-2, Project construction would exceed the daily and annual thresholds for PM_{10} (see Table 3.4-5 below). Although operational and decommissioning activities would not result in emissions that would exceed SJVAPCD thresholds for criteria pollutants (see Tables 3.4-5 and 3.4-7), the Project's short-term construction emissions would conflict with the implementation of existing air quality plans, and impacts would be potentially significant.

Implementation of **Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements** would reduce construction-related PM_{10} emissions to below SJVAPCD's daily screening and annual significance thresholds (see Table 3.4-7). Therefore, the Project would not conflict with the applicable air quality plan, and impacts would be less than significant with implementation of Mitigation Measure 3.4-1.

> **Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements.** To reduce fugitive dust emissions from travel on unpaved roads, the Applicant shall incorporate the following measures into the project's dust control plan. These measures shall be implemented in conjunction with the SJVAPCD Rule 8021 Measures.
>
> - Require that construction workers park personal vehicles at site access points along South Lost Hills Road or Sutter Avenue, both of which are paved roads, to the extent feasible.
> - Ensure that water trucks apply dust suppression before the commencement of construction activities on any given day, and continue water truck service nonstop throughout the construction day.
> - Restrict construction worker, vendor, and hauling truck travel to paved, gravel, or aggregate access roads, and minimize vehicle travel on exposed, unpaved surfaces. When unpaved surfaces cannot be avoided, use dust suppression.
>
> **Significance after Mitigation:** Less than Significant.

Criterion b) Whether the Project would result in a cumulatively considerable net increase of a criteria air pollutant for which the region is in non-attainment status.

Impact 3.4-2: The Project would result in a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard. (*Less than Significant with Mitigation Incorporated*)

Construction

Construction of the Project would require approximately 39 months of construction activity. Appendix A of the AQ and GHG Technical Report (included as Appendix E.1 to this EIR) contains the phasing specifics related to the Project construction schedule. Construction of the Project would generate air pollutant emissions from entrained dust, use of heavy-duty off-road equipment, vehicle emissions, and architectural coatings. Off-site emissions would be generated by construction worker commute trips and heavy-duty diesel haul and vendor truck trips. Construction emissions would vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions.

Table 3.4-5 summarizes the estimated maximum daily emissions and annual tons per year for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions for construction. The emissions shown in Table 3.4-5 were modeled assuming that vendor and hauling trips would occur on unpaved surfaces on-site, and that worker trips would be limited to paved roads. As shown in Table 3.4-5, the maximum daily and annual emissions of ROG, NO_x, CO, and SO_x from construction would not exceed the applicable screening and significance thresholds; however, PM_{10} emissions generated during Project construction would exceed both SJVAPCD's maximum daily screening and annual significance thresholds, and $PM_{2.5}$ emissions would exceed the daily screening threshold.

TABLE 3.4-5
DAILY AND ANNUAL CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS

Year	Pollutants					
	ROG	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Maximum Daily On-site Emissions						
2026	4	32	43	<1	33	5
2027	6	49	65	<1	1,120	114
2028	5	40	51	<1	1,112	113
2029	5	36	51	<1	1,104	112
Maximum Daily On-site Emissions (lb/day)	**6**	**49**	**65**	**<1**	**1,120**	**114**
SJVAPCD Screening Significance Thresholds (lb/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**Yes**	**Yes**
Annual Emissions						
2026	<1	1	1	<1	<1	<1
2027	1	6	8	<1	26	3
2028	1	5	11	<1	138	14
2029	1	5	10	<1	137	14
Maximum Daily On-site Emissions (ton/year)	**1**	**6**	**11**	**<1**	**138**	**14**
SJVAPCD Annual Significance Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**Yes**	**No**

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_x = oxides of nitrogen; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_x = oxides of sulfur

Source: Rincon Consultants 2025: Table 6

Table 3.4-6 summarizes the estimated maximum daily emissions and annual tons per year for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions for decommissioning. Emissions related to decommissioning of the Project would not exceed the SJVAPCD thresholds for any criteria pollutant.

TABLE 3.4-6
MAXIMUM DAILY AND ANNUAL DECOMMISSIONING CRITERIA AIR POLLUTANTS

Year	Pollutants					
	ROG	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Maximum Daily On-site Emissions (lb/day)	4	31	61	<1	6	2
SJVAPCD Screening Thresholds (lb/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions (tons/year)	1	4	8	<1	1	<1
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_x = oxides of nitrogen; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_x = oxides of sulfur

Source: Rincon Consultants 2025: Table 7

Therefore, Project construction would have the potential to result in a cumulatively considerable net increase in emissions of PM_{10} and $PM_{2.5}$, criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard. Impacts would be potentially significant.

Implementation of **Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements** would reduce PM_{10} and $PM_{2.5}$ emissions below SJVAPCD's screening and significance thresholds. As shown in **Table 3.4-7**, emissions were modeled assuming that vendor, hauling, and worker trips would occur on paved surfaces on-site, resulting in emissions below the applicable threshold. Therefore, Project construction would not result in a cumulatively considerable net increase of criteria pollutants and the impact would be reduced to less than significant.

Mitigation: Implement Mitigation Measure 3.4-1.

Significance after Mitigation: Less than Significant.

TABLE 3.4-7
MITIGATED MAXIMUM DAILY AND ANNUAL CONSTRUCTION CRITERIA AIR POLLUTANTS

	Pollutants					
Year	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily On-site Emissions						
2026	4	32	43	<1	6	2
2027	10	74	92	<1	42	8
2028	8	64	79	<1	34	7
2029	8	59	78	<1	26	6
Maximum Daily On-site Emissions (lb/day)	**10**	**74**	**92**	**<1**	**42**	**8**
SJVAPCD Screening Thresholds (lb/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions						
2026	<1	1	1	<1	<1	<1
2027	1	6	9	<1	3	1
2028	2	8	14	<1	4	1
2029	2	8	14	<1	3	1
Maximum Daily On-site Emissions (ton/year)	**2**	**8**	**14**	**<1**	**4**	**1**
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_x = oxides of nitrogen; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_x = oxides of sulfur

Source: Rincon Consultants 2025: Table 9

Operation

Operation of the Project would result in a renewable energy resource that would generate very limited direct emissions of air pollutants. **Table 3.4-8** presents the Project's operational emissions by source

(i.e., area, energy, mobile, and stationary). As shown, the emissions generated during operation of the Project would not exceed SJVAPCD's daily or annual thresholds for any criteria pollutant.

TABLE 3.4-8
MAXIMUM DAILY AND ANNUAL DECOMMISSIONING CRITERIA AIR POLLUTANTS

	Pollutants					
Emission Source	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Emissions						
Area	14	<1	4	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	<1	<1	<1	<1
Stationary	0	0	0	0	0	0
Total Maximum Daily Emissions (lb/day)	**14**	**<1**	**5**	**<1**	**<1**	**<1**
SJVAPCD Screening Thresholds (lb/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions						
Area	2	<1	<1	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	<1	<1	<1	<1
Stationary	0	0	0	0	0	0
Annual Project Emissions (tons/year)	**2**	**<1**	**<1**	**<1**	**<1**	**<1**
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_x = oxides of nitrogen; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; ROG = reactive organic gases; SJVAPCD = San Joaquin Valley Air Pollution Control District; SO_x = oxides of sulfur

Source: Rincon Consultants 2025: Table 8

As summarized in Table 3.4-8, Project operation and maintenance (O&M) would generate emissions that would be below SJVAPCD significance thresholds and the AAQA screening thresholds. 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. Accordingly, the Project would result in a less-than-significant impact associated with the increase in emissions of non-attainment pollutants. Therefore, consistent with SJVAPCD guidance, the Project's operations 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, resulting in a less-than-significant impact.

Mitigation: None required.

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

Impact 3.4-3: The Project would expose sensitive receptors to pollutant concentrations and risk of contracting Valley Fever. (*Less than Significant with Mitigation Incorporated*)

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 prevailing meteorological conditions. Air quality problems leading to health impacts arise when the rate of pollutant emissions exceeds the rate of dispersion. As discussed previously, 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.

The nearest sensitive receptors to the Project site are the residences adjacent to the southeastern corner of the Project property line (within the Lost Hills neighborhood) located approximately 250 feet from construction activity, and a single-family residence located on State Route 33 located approximately 750 feet from construction activity.

Construction and Decommissioning Heath Impact

Toxic Air Contaminants

As stated in the AQ and GHG Technical Report, the greatest potential for TAC emissions during construction and decommissioning would be for DPM emissions associated with heavy-duty equipment. Although construction equipment would be operated approximately 250 feet from the nearest sensitive receptors (residences southeast of the Project site) during photovoltaic array installation, construction activities would typically occur at distances much greater than 1,000 feet. Based on guidance from the California Office of Environmental Health Hazard Assessment, construction activities occurring within 1,000 feet of receptors for more than 2 months would potentially result in a significant impact. Based on the timing and intensity of Project construction, it is estimated that construction equipment would only operate within 1,000 feet of sensitive receptors for less than 1 month during the photovoltaic installation phase. Project components in the southeastern portion of the Project site would be farther than 1,000 feet from the closest sensitive receptors, including the ESS facility, substation, and switchyard, and would be accessed via an access point on Sutter Avenue. Therefore, the access route to those sites would also not be within 1,000 feet of nearby receptors. Therefore, the health risk impact from construction TAC emissions would be less than significant.

Furthermore, the Project would be consistent with the applicable SJVAPVD requirements and control strategies intended to reduce emissions from construction equipment and activities. The Project would comply with the CARB Air Toxics Control Measure that limits diesel-powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these regulations would minimize emissions of TACs during construction.

Mitigation: None required.

Criteria Air Pollutants

As stated in Impact 3.4-2, Project construction would have the potential to result in a cumulatively considerable net increase of PM_{10} and $PM_{2.5}$ emissions, which would be a significant impact. Accordingly, implementation of Mitigation Measure 3.4-1 is recommended to result in a less-than-significant impact for Project construction. As shown in Table 3.4-7, on-site emissions of criteria pollutants during construction activities would not exceed 100 lb/day with incorporation of Mitigation Measure 3.4-1. Therefore, consistent with SJVAPCD guidelines, the preparation of an AAQA would not be required for any of these pollutants, and construction and decommissioning health impacts would be less than significant with implementation of Mitigation Measure 3.4-1.

Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements.

Significance after Mitigation: Less than Significant.

Operation

As stated in the AQ and GHG Technical Report, sources of operational TACs typically include but are not limited to land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The Project would not include any of these uses. Operational activities throughout the Project site would use diesel-fueled off-road equipment that has the potential to emit DPM; however, the use of this equipment would be minimal and infrequent. Consistent with the construction activities, the Project would adhere to applicable SJVAPCD requirements and control strategies intended to reduce emissions from construction equipment and activities. The Project would comply with the CARB Air Toxics Control Measure, which limits diesel-powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these regulations would minimize emissions of TACs during construction.

The Project is located within 1,000 feet from the nearest sensitive receptors. However, diesel-fueled equipment would be used only occasionally during maintenance activities and would typically operate at distances greater than 1,000 feet given the nature of the Project site. Project operation would not be anticipated to result in substantial health risks for these receptors. Therefore, emissions of TACs and criteria air pollutants during operational activities would result in a less-than-significant health risk impact.

Mitigation: None required.

Carbon Monoxide Hotspots

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

As discussed previously, SJVAPCD’s Impact Assessment Guide (the GAMAQI document) uses the 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.

As stated in the AQ and GHG Technical Report, SJVAPCD does not monitor CO emissions at its air monitoring stations in Fresno County, nor are representative data available. According to the California Department of Transportation, the closest intersection with available data is State Route 33 at Merced Avenue, with an existing traffic volume of approximately 11,750 average daily trips (Caltrans 2021). The Project would generate up to a maximum of 1,200 daily one-way (600 round-trip) vehicle trips for this roadway during construction; therefore, the Project could result in a total of 12,950 daily trips (11,750 existing trips plus 1,200 maximum trips during construction) at the observed intersection. Based on the low background level of CO in the SJVAB (indicated by the lack of monitoring at the state or local level), the low and ever-improving emissions standards for new sources in accordance with federal and state regulations, and the fact that Project operation would result in a maximum of 55 trips per day during O&M activities, the Project would not create new CO hotspots. Therefore, the Project would not expose sensitive receptors to substantial CO concentrations, and localized air quality impacts related to CO hot spots would be less than significant.

Valley Fever

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. Workers who disturb soil where fungal spores are found, whether by digging, operating earthmoving equipment, driving vehicles, or working in dusty windblown areas, are more likely to breathe in spores and to become infected. Such ground-disturbing activities represent a continual source of spores that contribute to the low number of Valley Fever cases reported each year in the county (Fresno County 2024a). Construction and decommissioning activities associated with the Project would result in localized ground-disturbing activities similar to those that occur continually in the county. Construction activities associated with the Project would include ground-disturbing activities that could result in an increased potential to expose nearby residents and on-site workers to airborne spores, if they are present. Compliance with dust control measures required by SJVAPCD Rule 8021 (as detailed in Table 3.4-3) would minimize personnel and public exposure to Valley Fever and reduce the potential risk of nearby resident and on-site worker exposure to Valley Fever. However, without additional controls, impacts would be potentially significant.

Implementation of Mitigation Measure 3.4-1 and **Mitigation Measure 3.4-2: Minimization of Personnel and Public Exposure to Valley Fever** is required, to minimize personnel and public exposure to Valley Fever to the greatest extent possible. Therefore, impacts would be less than significant with implementation of Mitigation Measures 3.4-1 and 3.4-2.

> **Mitigation Measure 3.4-1**: Construction Worker Paved Road Travel Requirements
>
> **Mitigation Measure 3.4-2**: Minimization of Personnel and Public Exposure to Valley Fever
>
> The fugitive dust control plan to be prepared for the Project shall include the following measures:
>
> - Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations.
> - Wherever possible, grading, and trenching work shall be phased so that earthmoving equipment works well ahead or downwind of workers on the ground.

- The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust shall leave the area until a full truck resumes water spraying.
- All heavy-duty earthmoving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Air (i.e., HEPA) filtered air system to the maximum extent practicable. When closed-cab equipment is unavailable, operators shall be provided N95 dust masks.
- N95 dust masks shall be provided to on-site workers for the duration of the construction period.
- Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Fresno County Planning and Community Development Department within 24 hours of the training session.
- A Valley Fever informational handout shall be provided to all on-site construction personnel. The handout shall provide, at a minimum, information regarding the symptoms, health effects, preventive measures, and treatment.

Significance after Mitigation: Less than Significant.

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

Impact 3.4-4: The Project would result in emissions (such as those leading to odors) that could adversely affect people. (*Less-than-Significant Impact*)

Construction

Per Section 8.6 of SJVAPCD's GAMAQI document, any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact.

Odors would be generated from vehicles and equipment exhaust emissions during construction and decommissioning of the Project. However, the solar energy facility and ESS would not produce objectionable odors. 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 disperse and dissipate, and thus would not cause substantial odors at the closest sensitive receptors (adjacent residences). Therefore, odors associated with construction would not result in a nuisance to sensitive receptors or any surrounding land uses, and the associated impact would be less than significant.

Operation

During Project operation, the Project would not introduce any potential sources of odors beyond the use of vehicles for routine inspection and maintenance and equipment used to facilitate activities. O&M activities would be minimal and would not result in substantial odors. Therefore, operational impacts associated with odors would also be less than significant.

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

As described in Chapter 2, *Project Description*, energy from the proposed solar arrays would be collected at the Project substation and transmitted to Pacific Gas and Electric Company's (PG&E's) new 230-kilovolt switching station by an approximately 200-foot-long new transmission line (gen-tie line). According to the Project construction schedule, emissions from the new PG&E switching station and gen-tie line would happen concurrently with the rest of the Project and are included in the emissions estimates for the Project shown in Tables 3.4-5 and 3.4-7. No additional vehicle trips (workers or trucks) not already accounted for in the preceding discussion of Project O&M and decommissioning impacts would be needed to operate and maintain or to decommission PG&E infrastructure. Therefore, the impacts on air quality discussed above under Impacts 3.4-1 through 3.4-4 would also include impacts from the PG&E infrastructure component of the Project.

Implementation of **Mitigation Measure 3.4-1: Construction Worker Paved Road Travel Requirements**, **Mitigation Measure 3.4-2: Minimization of Personnel and Public Exposure to Valley Fever**, and applicable SJVAPCD rules and regulations such as Regulation VIII (Fugitive PM_{10} Prohibitions) and Rule 9510 (Indirect Source Review) would be required to reduce air quality plan impacts, PM_{10} and $PM_{2.5}$ emissions, and sensitive receptor exposures from the Project as a whole, including the PG&E infrastructure. Impacts 3.4-1 through 3.4-3 from activities associated with the PG&E infrastructure and the combined impacts of the Project would be less than significant with mitigation incorporated. Impact 3.4-4 from odor activities associated with the PG&E infrastructure and the combined impacts of the Project would be less than significant. Therefore, the PG&E infrastructure, as a component of the Project as a whole, would have a less-than-significant impact, with mitigation incorporated, under criteria a), b), and c) and a less-than-significant impact under criterion d).

3.4.4 Cumulative Analysis

The geographic scope considered for potential regional cumulative impacts to air quality is the SJVAB, which is governed by SJVAPCD. The SJVAB currently is classified as non-attainment for the 1-hour state ozone standard and for the federal and state 8-hour ozone standards. Additionally, the SJVAB 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 2024a). Therefore, there is an existing adverse cumulative impact in the SJVAB relative to these pollutants. The list of projects considered for the local cumulative impacts analysis is provided in Table 3.1-1, *Cumulative Projects List.*

Impact 3.4-5: The Project impact related to conflicting with or obstructing implementation of the applicable air quality plans for SJVAPCD would be cumulatively considerable. (*Less than Significant with Mitigation Incorporated*)

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. Although a significant cumulative air quality impact exists in non-attainment regions exceeding the federal and/or state 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.

Because Project construction emissions would be below SJVAPCD thresholds with implementation of Rule 9510, Rule 8021, and **Mitigation Measure 3.4-1**, 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, 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 with mitigation.

Project operation would include minimal emissions of ozone precursors ROG and NO_x, PM_{10}, and $PM_{2.5}$, well below SJVAPCD's thresholds; therefore, O&M would not result in a cumulatively considerable increase in emissions of non-attainment pollutants and the associated cumulative impact would be less than significant. The cumulative impact related to conflicting with or obstructing implementation of the applicable air quality plans would be less than significant with mitigation.

Impact 3.4-6: The Project impact related to generating a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be cumulatively considerable. (*Less than Significant with Mitigation Incorporated*)

As described above in Impacts 3.4-2 and 3.4-5, the Project would not result in a cumulatively considerable contribution to non-attainment criteria pollutants, because Project emissions would be below SJVAPCD thresholds with implementation of Rule 9510, Rule 8021, and **Mitigation Measure 3.4-1**. Project emissions of pollutants for which the SJVAB is in attainment for the federal and state 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. Therefore, the Project impact related to generating a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would not be cumulatively considerable, and the cumulative impact would be less than significant with mitigation.

Impact 3.4-7: The Project impact related to exposing sensitive receptors to pollutant concentrations and to *Coccidioides immitis* spores would be cumulatively considerable. (*Less than Significant with Mitigation Incorporated*)

SJVAPCD considers TAC emissions to be localized impacts. 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 exceeding the individual thresholds of significance are also considered cumulatively significant (SJVAPCD 2015a). The cumulative project list in Table 3.1-1 identifies potential projects within a 15-mile radius of the Project.

As discussed under Impact 3.4-3, the Project's construction, operation, and decommissioning would not result in significant impacts with incorporation of Mitigation Measures 3.4-1 and 3.4-2. Therefore, the Project would not result in a cumulatively significant impact related to TACs, CO impacts, and Valley

Fever–related impacts. Therefore, it can be concluded that the Project's contribution to the cumulative health risk would not be considerable, and the cumulative impact on sensitive receptors would be less than significant with mitigation.

Impact 3.4-8: The Project impact related to emissions (such as those leading to odors) adversely affecting people would not be cumulatively considerable. (*Less-than-Significant Impact*)

The Project does not propose any land uses that could be considered as sources of odor. Odor impacts of the Project would be primarily from diesel exhaust from construction equipment and trucks, which would be localized to the construction area and would not combine with any other odor sources for a cumulative impact. Therefore, the Project's odor impact would not be cumulatively considerable and the cumulative impact with respect to odors would be less than significant.

Conclusion

Therefore, in accordance with SJVAPCD guidance as outlined above, the Project would not have a cumulatively considerable contribution to cumulative air quality impacts. The cumulative air quality impacts would be less than significant.

3.4.5 References

CARB (California Air Resources Board). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October 2000. Available: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rrpfinal.pdf. Accessed September 2024.

CARB (California Air Resources Board). 2010. *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*. Mobile Source Control Division, Emissions Reductions Incentives Branch. October 2010. Available: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2010/offroadlsi10/offroadisor.pdf.

CARB (California Air Resources Board). 2024a. "iADAM: Air Quality Data Statistics—Top 4." Available: https://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed September 2024.

CARB (California Air Resources Board). 2024b. "California Ambient Air Quality Standards." Available: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed September 2024.

CARB (California Air Resources Board). 2024c. "In-use Off-road Diesel-fueled Fleet Regulations." Available: https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation/about. Accessed September 2024.

CDC (Centers for Disease Control and Prevention). 2024a. "Valley Fever (Coccidioidomycosis) Statistics." Available: https://www.cdc.gov/valley-fever/php/statistics/index.html. Accessed September 2024.

CDC (Centers for Disease Control and Prevention). 2024b. "Reducing Risk for Valley Fever." Available: https://www.cdc.gov/valley-fever/prevention/index.html. Accessed September 2024.

CDIR (California Department of Industrial Relations). 2024. "Protection from Valley Fever." Available: http://www.dir.ca.gov/dosh/valley-fever-home.html. Last updated February 2024. Accessed September 2024.

California Department of Transportation (CalTrans). 2021. Traffic Census Program 2021 AADT. Available: https://dot.ca.gov/programs/traffic-operations/census. Accessed May 2025.

FCDPH (Fresno County Department of Public Health). 2024. "Valley Fever Dashboard, Fresno County." Available: https://lookerstudio.google.com/reporting/be75f92d-748c-448f-ac2b-7cea2fe8b0b0. Accessed September 2024.

Fresno County. 2024a. "Valley Fever." Available: https://www.fresnocountyca.gov/Departments/Public-Health/Community-Health/Communicable-Disease-Investigation-Program/Valley-Fever. Accessed September 2024.

Fresno County. 2024b. *Fresno County General Plan Policy Document*. Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed September 2024.

Rincon Consultants, Inc. 2025. *Cornucopia Hybrid Project: Air Quality and Greenhouse Gas Emissions Technical Report.* Fresno, CA. Prepared for BayWa r.e. Solar Projects LLC, Irvine, CA. February 2025.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2004. *Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.* Adopted November 15, 2001, Amended August 19, 2004. Available: www.valleyair.org/rules/currntrules/r8021.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2008. *2008 PM2.5 Plan*. Adopted April 30, 2008. Available: http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_PM25_2008.htm. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2013. *2013 Plan for the Revoked 1-Hour Ozone Standard*. September 19, 2013. Available: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/AdoptedPlan.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2014. *Policy for District Rule 2201 AAQA Modeling*. April 2014. Revised March 10, 2019. Available: https://ww2.valleyair.org/media/2aumgx1i/apr-1925.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2015a. *Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI),* March 19, 2015. Available: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2015b. *2015 Plan for the 1997 PM2.5 Standard*. Adopted April 16, 2015. Available: http://www.valleyair.org/Air_Quality_Plans/docs/PM25-2015/2015-PM2.5-Plan-Complete.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2016a. *2016 Plan for the 2008 8-Hour Ozone Standard*. Adopted June 16, 2016. Available: https://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/Adopted-Plan.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2016b. *2016 Moderate Area Plan for the 2012 PM2.5 Standard*. Adopted September 15, 2016. Available: http://www.valleyair.org/Air_Quality_Plans/docs/PM25-2016/2016-Plan.pdf. September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2018. *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards*, November 15, 2018. Available: http://www.valleyair.org/pmplans/documents/2018/pm-plan-adopted/2018-Plan-for-the-1997-2006-and-2012-PM2.5-Standards.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2020. *2020 Reasonably Available Control Technology (RACT) Demonstration for the 8-Hour Ozone Standard*, May 19, 2020. Available: http://www.valleyair.org/Workshops/postings/2020/06-18-20_RACT/Final-2020-RACT-Demonstration-for-the-2015-8-Hour-Ozone-Standard.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2022. *2022 Plan for the 2015 8-Hour Ozone Standard*, December 12, 2022. Available: https://ww2.valleyair.org/media/q55posm0/0000-2022-plan-for-the-2015-8-hour-ozone-standard.pdf. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2024a. *Ambient Air Quality Standards & Valley Attainment Status*. Available: https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/. Accessed September 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2024b. *2024 Plan for the 2012 Annual $PM_{2.5}$ Standard,* adopted June 20, 2024. Available: https://ww2.valleyair.org/media/gw5bacvj/2024-pm25-plan.pdf. Accessed September 2024.

USEPA (U.S. Environmental Protection Agency). 2008. "Redesignation of the San Joaquin Valley Air Basin PM-10 Nonattainment Area to Attainment." *Federal Register* 73:66759–66775, November 12, 2008. Available: https://www.federalregister.gov/documents/2008/11/12/E8-26500/approval-and-promulgation-of-implementation-plans-designation-of-areas-for-air-quality-planning. Accessed January 2021.

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3.5 Biological Resources

This section identifies and evaluates issues related to all of the following:

- Species protected by local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).
- Riparian habitat or other specified sensitive natural communities.
- Federally protected wetlands.
- Native, resident, or migratory fish or wildlife species, wildlife corridors, and native wildlife nursery sites.
- Adopted federal, state, regional, or local habitat conservation plans (HCPs).

The section describes the physical and regulatory setting, identifies the criteria used to evaluate the significance of potential impacts, describes the methods used to evaluate these impacts, and reports the results of the impact assessment.

The County received scoping input from CDFW regarding special-status species, recommended habitat assessments, regulatory obligations, and the potential impacts of pesticide use. A copy of the letter is provided in Exhibit E of **Appendix A**, *Scoping Report.*

The analysis in this section is based in part on the site-specific, Project-specific Biological Resources Technical Report, which includes an aquatic resource delineation report prepared on the Applicant's behalf (**Appendix F**); associated technical surveys; and datasets from the California Natural Diversity Database (CNDDB) (CDFW 2024a), California Native Plant Society (CNPS 2024), and USFWS (2024a). The preparers of this Draft EIR (identified in Chapter 6, *Report Preparation*) independently reviewed 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.

3.5.1 Setting

3.5.1.1 Environmental Setting

Physical Setting

The Project site is located in unincorporated Fresno County, 4 miles west of Interstate 5 and 11 miles southeast of the city of Coalinga, near the western edge of the San Joaquin Valley at the eastern slope of the Diablo Range. 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 totals approximately 2,446 acres of agricultural lands and is generally bounded by agricultural fields. The northwest-to-southeast State Route 33 and the north-to-south Sutter Avenue both bisect the Project site. The Project site consists of generally flat terrain on undeveloped agricultural land. Soil data for the site from the U.S. Natural Resources Conservation Service show moderate to well-drained soils native to the area; Cerini, Ciervo clay, Milham, Milham-Guijarral, and Panoche soils are

most prevalent (Appendix F, *Biological Resources Technical Report*). Elevations on the Project site range from approximately 689 to 857 feet (210–260 meters) above mean sea level.

Agricultural uses of the Project site include grazing and intermittent production of wheat. Existing land uses surrounding the site are primarily agricultural, with some residential development to the east. Little natural habitat exists in the local area, as the land around the Project site is cultivated and fallow or used for grazing.

Vegetation Communities

As shown in **Appendix F**, five land cover types were mapped within the Project site and a surrounding 500-foot buffer area: agricultural fields, nonnative annual grassland, orchard/ornamental trees, ephemeral/intermittent streams, and disturbed lands. No sensitive vegetation communities occur on the Project site.

Agricultural Fields

The dominant land cover type on the Project site is general agriculture, 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 nonnative 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 (unirrigated) agricultural production of wheat and grazing fodder (**Appendix D**, *Land Evaluation and Site Assessment*). Both active croplands and fallow fields are present on the Project site (see **Appendix F**).

Nonnative Annual Grassland

The Project site has nonnative annual grassland along the perimeters, composed of wild oats and annual brome (*Avena* spp.–*Bromus* spp. Herbaceous Semi-Natural Alliance). This community covers approximately 11 acres of the Project site and buffer area. Within these areas, the dominant grass species are slener oat (*Avena barbata*) and great brome *(Bromus diandrus)*. Co-dominant species include small fescue (*Festuca microstachys*), shining pepper grass (*Lepidium nitidum*), and adobe popcornflower (*Plagiobothrys acanthocarpus*) (Appendix F).

Orchard/Ornamental Trees

Ornamental black poplar trees (*Poplus nigra*) are located adjacent to the Project site. An approximately 1,500-foot-long hedgerow separates a neighboring pistachio orchard from the southern border of the site. The hedgerow is a single row abutting the pistachio tree orchard, and the land on the Project site that borders the trees is fallow (Appendix F).

Ephemeral/Intermittent Streams

Two intermittent streams cross the Project site, Canoas Creek and Garza Creek, as does an unnamed intermittent stream that flows into Canoas Creek. These streams cross the Project site from the north to the southeast and carry water seasonally within their watercourses, or washes. Additionally, there are additional ephemeral tributaries (also known as arroyos) throughout the Project site that only briefly contain water after rain events. All aquatic resources identified on the Project site have been avoided through Project design.

Figure 3.5-1, *View of Canoas Creek Course from Sutter Avenue*, shows a portion of Canoas Creek within the Project site, near the creek's Sutter Avenue crossing. The photo was taken in late summer.



Figure 3.5-1
View of Canoas Creek Course from Sutter Avenue

Vegetation including isolated salt cedar (*Tamarix ramosissima*) and native red willow (*Salix laevigata*) trees are dotted along the banks of Canoas and Gasca creeks, with grasses including slender oat, wall barley (*Hordeum murinum*), and *Bromus* species underneath. The streamside vegetation provides cover for wildlife movement and may support nesting migratory birds in season. Canoas Creek's headwaters are on the north slope of Black Mountain in the Diablo Range to the southwest, and the creek runs northeast through Reef Ridge and the Kreyenhagen Hills. Canoas Creek meets Gasca Creek on the Project site and terminates in the northern portion of the Kettleman Plain (Appendices C–E to Draft EIR Appendix F).

Disturbed Lands

Disturbed areas are the portions of the Project site that have been altered from their natural state by human influence and are barren or contain minimal weedy vegetation. This cover type includes all paved and dirt roads, buildings, and cleared areas.

3.5.1.2 Special-Status Species

Special-status species Table BIO-1 in Appendix F identifies the special-status plant and wildlife species that occur in the vicinity of the Project site based on the CNDDB, California Native Plant Society, and USFWS databases (CDFW 2024a; CNPS 2024; USFWS 2024a), as well as vegetation, soils, elevation, and other factors. **Figure 3.5-2**, *CNDDB Occurrences within 5 Miles of the Project Site*, shows the special-status wildlife species recorded within 5 miles of the Project site (CDFW 2024a).

Species with moderate or higher potential to occur on the Project site and 500-foot buffer, or for which surveys were conducted on-site, are discussed below. Focused biological resources surveys were conducted at the Project site in 2021 for burrowing owl, San Joaquin kit fox, and Swainson's hawk (Appendix F).

Plants

San Joaquin Woollythreads

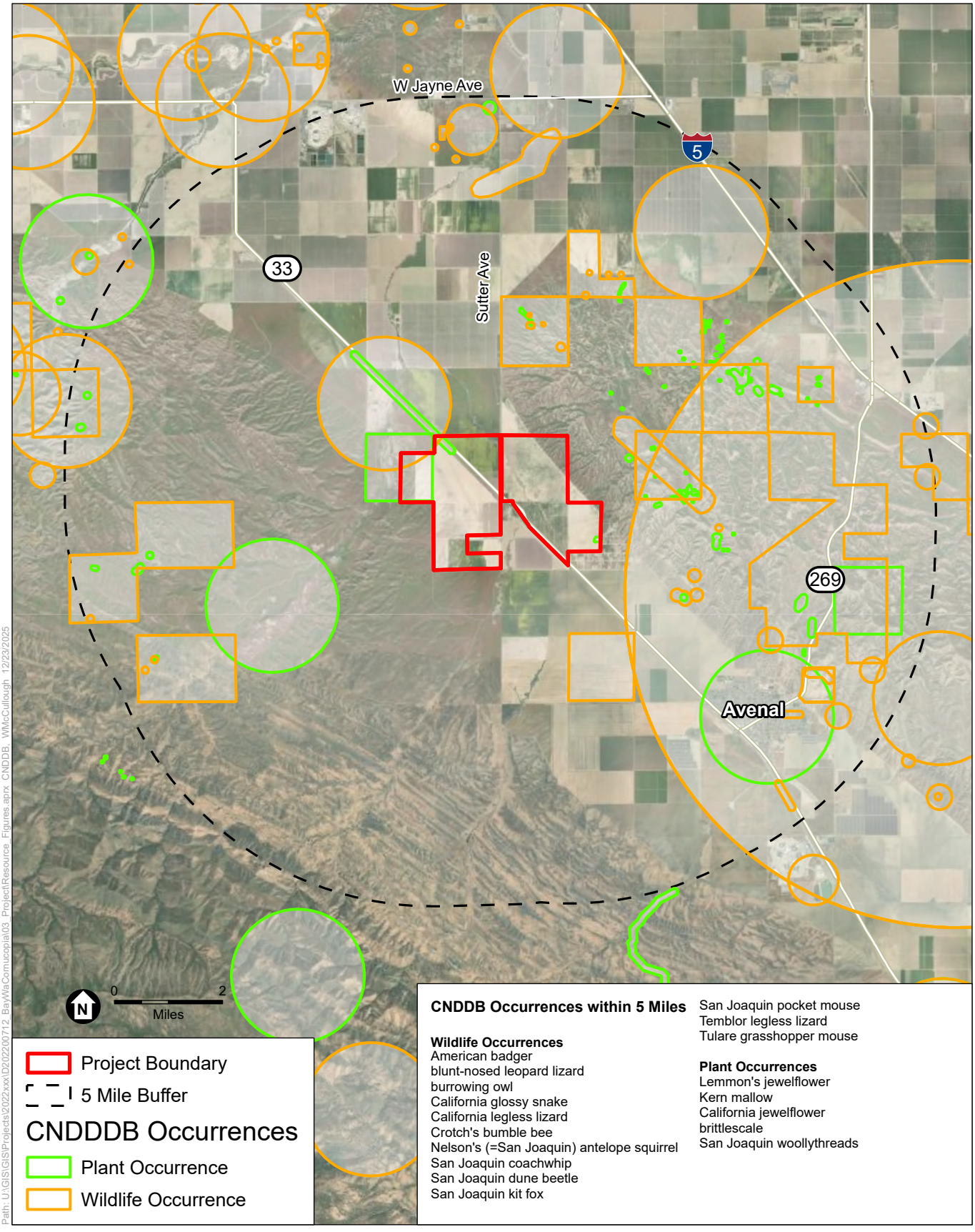
San Joaquin woollythreads (*Monolopia congdonii*) is a California Rare Plant Rank 1B.2 species and is federally listed as endangered. This species occurs in chenopod scrub, valleys, and foothill grasslands at elevations of approximately 295–2,300 feet (90–700 meters) above sea level. Furthermore, this species prefers arid land with sparse vegetation and can grow in areas that have been partially disturbed from agriculture, silviculture, or aquaculture. It blooms from February to May (USFWS 2024b).

There were numerous records of San Joaquin woollythreads within 5–10 miles of the Project site, noted as being in sandy loam or alluvium soil, often in scrub or nonnative grassland (CDFW 2024a). Because disturbed agricultural land or grassland in the stream washes and on the borders of the Project site may host this species, it has moderate potential to occur in these habitats.

Kern Mallow

Kern mallow (*Eremalche parryi* ssp. *kernensis)* is a California Rare Plant Rank 1B.2 species and is federally listed as endangered. This species occurs in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodlands at elevations of approximately 325–3,250 feet (100–1,000 meters) above sea level. It blooms from March to May (USFWS 2024c).

One occurrence was recorded in open grassland 5 miles east of the Project site in 1973. Populations can vary significantly from year to year based on rainfall; there may be no individuals in a given location in one year, then hundreds in the next year. Because grassland in the stream washes and on the borders of the Project site may host this species, there is a moderate potential for this species to occur in association with drainages on the site (CDFW 2024a).



Source: ESA, 2024; CDFW, 2024

Cornucopia Hybrid Project

Figure 3.5-2
CNDDB Occurrences within 5 Miles of the Project Site

ESA

Lemmon's Jewelflower

Lemmon's jewelflower (*Caulanthus lemmonii)* is a California Rare Plant Rank 1B.2 species. This species is found in pinyon and juniper woodland and valley and foothill grassland at elevations of approximately 260–3,600 feet (80–1,100 meters) above sea level. The species blooms from February to May (CNPS 2024).

One occurrence was recorded on east-facing slopes 4 miles southeast of the Project site in 2010. Because grassland in the stream washes and on the borders of the Project site may host this species, there is a moderate potential for this species to occur in such areas (CDFW 2024a).

Wildlife

San Joaquin Kit Fox

San Joaquin kit fox (*Vulpes macrotis mutica*) is federally listed as endangered and state-listed as threatened. Historically, San Joaquin kit fox distribution extended throughout the San Joaquin Valley and the surrounding foothills of the Coast Ranges. The species' range has been significantly reduced, and the largest extant populations occur in the western portions of the San Joaquin Valley south of Fresno County, especially the Ciervo-Panoche core area to the south (USFWS 2010). San Joaquin kit foxes burrow in annual grasslands or grassy, open areas with scattered shrubby vegetation. The species requires loose-textured sandy soils for burrowing and a suitable prey base of rodents for forage. San Joaquin kit foxes may venture into agricultural lands for dispersal or foraging but are unlikely to reside there because of frequent disturbance.

Numerous records of this species occur within 5 miles, with the closest occurrence 0.5 mile to the east in 1981 (CDFW 2024a). During the field reconnaissance survey, the carcass of a San Joaquin kit fox was observed adjacent to the Project site and numerous burrows of California ground squirrel (*Otospermophilus beecheyi*) were observed throughout the Project site (Appendix F). Although most of the Project site is of low habitat value for kit fox because of active agricultural activities, nonnative grassland and stream washes on the site provide potential habitat for this species for denning, foraging, or dispersal. The Project site plus 500-foot buffer zone included approximately 27 acres of habitat within the tops-of-bank of the stream courses (Appendix F). There is moderate potential for San Joaquin kit fox to occur in these areas of the Project site.

Nelson's (San Joaquin) Antelope Squirrel

Nelson's (San Joaquin) antelope squirrel (*Ammospermophilus nelsoni*) is state-listed as threatened. This small mammal species is found in the western San Joaquin Valley from 200 to 1,200 feet (60–350 meters) in elevation on dry, sparsely vegetated loam soils. It may dig burrows or use the burrows of kangaroo rats. It prefers widely scattered shrubs, forbs, and grasses in broken terrain with gullies and stream washes.

There are several records of this species within 10 miles of the Project site (CDFW 2024a), and it has a moderate potential to occur in burrows within the washes that cross the site. This species is not expected within cultivated portions of the site because these areas lack suitable burrows as a result of discing.

Short-Nosed Kangaroo Rat

The short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*) is a state species of special concern. Its range is on the western side of San Joaquin Valley in grassland and desert shrub associations, especially *Atriplex* (saltbush). It requires loose soil for burrowing and favors flat to gently sloping terrain.

This species has been recorded in alkaline soils near Soda Lake in San Luis Obispo County to the south and has several records within 10 miles of the Project site (CDFW 2024a). It has a moderate potential to occur within the washes that cross the site, but it is not expected within cultivated areas because these areas lack suitable burrows as a result of disking.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is state-listed as threatened. In California, this species nests in the Central Valley, the Klamath Basin, the Northeastern Plateau, Lassen County, and the Mojave Desert. It breeds in stands with few trees in riparian areas, agricultural environments, oak savanna, and juniper-sage flats (Zeiner et al. 1990). Swainson's hawks forage in adjacent grasslands or livestock pastures. In the Central Valley, they nest in riparian areas and in isolated tree clusters, often near rural residences or agricultural fields, and on structures such as power poles. Swainson's hawk historically occupied much of the state, but the species' range is now largely restricted to the Central Valley, and breeding populations in this area have declined in association with the loss of suitable foraging and nesting habitat.

One recent (2015) occurrence of nesting Swainson's hawks is located 5 miles northwest of the Project site in a tamarisk tree overlooking pastureland; numerous additional records are located within 10 miles (CDFW 2024a). Several Swainson's hawks were observed in the vicinity during Swainson's hawk surveys conducted between April and July 2023 (Appendix F). This species typically prefers to nest within a grove or lines of trees but will nest in smaller or isolated trees when higher quality nesting habitat is absent. Marginally suitable nesting habitat for Swainson's hawk is present along the boundary of the Project site in the hedgerow of black poplar trees and within 0.5 mile on power poles or other structures. Suitable foraging habitat for Swainson's hawk is present in the agricultural fields of the Project site. This species has moderate potential to occur while nesting and high potential while foraging.

Western Burrowing Owl

Western burrowing owl (*Athene cunicularia hypugea*) is a state species of special concern and a state candidate threatened species (CDFW 2024b). As a CESA candidate species, it is protected from "take" while the California Fish and Game Commission determines whether to list the species. Western burrowing owls are yearlong residents of open, dry grassland and desert habitats, and in the grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats (Zeiner et al. 1990). This species' preferred habitat is generally short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils. Burrowing owls require small-mammal burrows for nesting, roosting, cover, and catching prey; they do not dig their own burrows. In California, western burrowing owls most commonly live in burrows created by California ground squirrels. Burrowing owls may occur in disturbed landscapes such as agricultural areas, ruderal grassy fields, vacant lots, and pastures where usable burrows are present, provided that suitable foraging habitat exists nearby. Debris piles, riprap, culverts, and pipes may be used as burrow substitutes. Although the burrowing owl has experienced population reductions over the extent of its range, the species' range remains wide and the Central Valley population has remained sizable, largely because of its ability to occupy agricultural lands and other disturbed habitats (Shuford and Gardali 2008).

The closest record of this species is approximately 2 miles east of the Project site from 2005, with numerous additional records within 5–10 miles (CDFW 2024a). Three burrows with burrowing owl sign (e.g., whitewash, pellets) were observed on the Project site during burrowing owl surveys performed in

2023. In addition, approximately 300 burrows suitable for use by a western burrowing owl were observed during the surveys (Appendix F). This species is highly likely to occur.

Blunt-Nosed Leopard Lizard

The blunt-nosed leopard lizard (*Gambelia sila*) is federally listed and state-listed as endangered and is classified as a state fully protected species. It ranges from Stanislaus County in the north to the Tehachapi Mountains in the south, in the San Joaquin Valley. This species can be found in sparsely vegetated alkali and desert scrub habitats in areas of low topographic relief; it usually seeks cover in mammal burrows or under shrubs or structures such as fence posts (USFWS 2024d).

Several records of blunt-nosed leopard lizard are located within 1–2 miles of the Project site to the northwest, north, and east in nonnative grasslands and stream washes, including in grasslands 1 mile north and east of the site in 1979 (CDFW 2024a). Additionally, suitable small-mammal burrows were seen during the biological resources survey (Appendix F). This species has a moderate potential to occur in uncultivated areas.

Temblor Legless Lizard

The Temblor legless lizard (*Anniella alexanderae*) is a state species of special concern and can be found in sandy soils at the southeast base of the Temblor Range, in the southwestern San Joaquin Valley and Kern County. Like other *Anniella* species, it prefers sparsely vegetated areas with moist, loose soil.

This species was recorded 5 miles north of the Project site on the bank of Jacalitos Creek in 2023, and at other locations 5–10 miles to the north and northwest (CDFW 2024a). The soil in the Project site's washes is sandy, which could serve as suitable habitat for this species. This species has a moderate potential to occur within uncultivated site drainages.

California Glossy Snake

The California glossy snake (*Arizona elegans occidentalis*) can be found in the eastern portion of the San Francisco Bay Area, the southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. This species is a generalist that prefers scrub and grassland habitats, often with loose or sandy soils (CDFW 2024a).

There are four recorded occurrences of California glossy snake approximately 5 miles northwest of the Project site. Project site washes contain sandy soils that could be used by this species, which has a moderate potential to occur (CDFW 2024a).

San Joaquin Coachwhip

The San Joaquin coachwhip (*Masticophis flagellum ruddocki*) is a state species of special concern. It can be found in open, dry habitats with little or no tree cover and in valley grassland and saltbush scrub in the San Joaquin Valley.

Two records of this species were found in nonnative grassland, retired farmland, and riparian habitat within 10 miles of the Project site as recently as 2005 (CDFW 2024a). The Project site has suitable habitat for this species in the washes, fallow fields, and grassland. This species has a moderate potential to occur in the washes on-site.

Crotch's Bumble Bee

The Crotch's bumble bee (*Bombus crotchii*) is a state candidate for listing. It can be found from coastal California east to the Sierra Nevada/Cascade Range crest and south into Mexico in grassland and scrub areas, where it nests in underground burrows.

One record of this species' occurrence, from 1971, was documented 10 miles north of the Project site in Jacalitos Creek and is presumed extant. This species has a moderate potential to occur in uncultivated grasslands on the Project site (CDFW 2024a).

Migratory Nesting Birds and Roosting Bats

Several migratory bird species—common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), and mourning dove (*Zenaida macroura*)—were observed during the biological resources survey conducted for this Project (Appendix F). The site includes habitat for birds to nest, overwinter, or stop over during migration along the Pacific Flyway, a regional flight corridor on the West Coast of North America, where up to 1 billion birds travel annually. Bat species may also roost overnight or hibernate in crevices or under loose bark of trees. Nesting habitat for birds and roosting habitat for bats such as the western mastiff bat (*Eumops perotis californicus*) may be present on the Project site in orchard or ornamental trees, or in shrubs or tall grasses. The agricultural land and stream courses may offer the species suitable foraging options for insect and other invertebrate prey.

3.5.1.3 Regulatory Setting

Federal

Endangered Species Act

The federal Endangered Species Act of 1973 (FESA) and subsequent amendments (United States Code Title 16, §§1531–1543) 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 law also provides a program for the conservation and recovery of threatened and endangered species and the conservation of designated critical habitat that USFWS determines to be required for the survival and recovery of these listed species.

FESA Section 9 lists actions that are prohibited under the FESA. The definition of *take* is 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 significantly disrupting normal behavioral patterns related to breeding, feeding, and shelter.

FESA 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

The Migratory Bird Treaty Act (United States Code Title 16, §§703–711) is the domestic law that affirms and implements a commitment by the United States 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 Migratory Bird Treaty Act prohibits the intentional pursuit, hunting, taking, capture, or killing of migratory birds anywhere in the United States. The law also applies to the disturbance and removal of nests occupied by migratory birds or their eggs during the breeding season, whether intentional or incidental.

State

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code §2050 et seq.) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA affirms 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 FESA and the CESA, 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 §2080.1. Before a project may result in lawful take of a species listed under the CESA, a take permit must be issued under §2081(b).

Fish and Game Code Section 1600

CDFW regulates streambeds, their banks, and riparian habitat under section 1600 of California Fish and Game Code. Alteration to streambeds, banks, and/or riparian habitat requires a Lake and Streambed Alteration Agreement from CDFW before the initiation of such work.

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* [California 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 §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 a permit or memorandum of understanding if (a) the take is incidental to an otherwise lawful activity, (b) the individual or public agency minimizes and fully mitigates impacts of the authorized take, (c) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (d) the project operator ensures that adequate funding is available to implement the measures that CDFW requires. 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, 3513, and 4150

These sections of the Fish and Game Code prohibit project operators from conducting activities that would result in any of the following: (a) the take, possession, or destruction of any birds of prey; (b) the

take or possession of any migratory nongame bird; (c) the take, possession, or needless destruction of the nest or eggs of any raptors or nongame birds; or (d) the take of any nongame bird, pursuant to Fish and Game Code §3800, whether intentional or incidental. Section 4150 protects nongame mammals, including roosting bats.

Fully Protected Species

Fish and Game Code §3511 (birds), §4700 (mammals), §5050 (reptiles and amphibians), and §5515 (fish) allow the designation of a species as fully protected. This is a greater level of protection than is afforded by the CESA and generally prohibits all take of species listed as fully protected, although take authorization may be obtained for take resulting from the construction and operation of electrical infrastructure projects, including solar energy projects meeting certain requirements.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (§13260 of the California Water Code) requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." This law defines *waters of the state* as "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the converse is not true: In California, waters of the United States represent a subset of waters of the state. Therefore, the State of California, through each of nine regional water quality control boards, retains authority to regulate discharges of waste into any waters of the state under Clean Water Act Section 401 permits.

CEQA Guidelines Section 15380

CEQA Guidelines §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 either of the following criteria:

- 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.
- 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 FESA.

Native Plant Protection Act

California's Native Plant Protection Act (Fish and Game Code §§1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of this law prohibit the taking of endangered or rare plants from the wild and require that CDFW be notified at least 10 days in advance of any change in land use in areas that support listed plants.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County 2024 General Plan

The Fresno County General Plan (Fresno County 2024) outlines several policies intended for the protection of biological resources countywide. The following policies from the Open Space and Conservation Element and the Agriculture and Land Use Element 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 [CDFW] 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 shall require developers to take into account a site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading.

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.B: During the develop[ment] review process, the County shall evaluate and incorporate all practical buffers for new non-agricultural uses proposed in agricultural areas of the county. 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.

Fresno County Code

Chapter 13.12–Trees and Shrubs of the Fresno County Code establishes permit rules for tree planting and landscaping, including species of trees, planting locations, and irrigation regimes.

3.5.2 Significance Criteria

The Project would result in a significant impact on biological resources if it would do any of the following:

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

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 Wildlife 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.

3.5.3 Direct and Indirect Effects

3.5.3.1 Methodology

The following analysis relies on the criteria from the CEQA Guidelines Appendix G environmental checklist to determine whether the Project could cause a potential significant effect on biological resources, including resources that occur or could occur on or near the Project site. Existing and potential biological resources were identified through a review of relevant literature and occurrence databases, and review of biological reports. Such resources include sensitive habitats, including potentially jurisdictional features; special-status plant and wildlife species; and potential wildlife movement corridors.

3.5.3.2 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), d), and e) and no impact with respect to criteria b), c), and f). The impact conclusions and mitigation recommendations for the subset of the Project that is the Pacific Gas and Electric Company (PG&E) infrastructure would be the same as for the Project as a whole, except for criterion f), for which PG&E infrastructure would have a less-than-significant impact.

Solar Facility and Energy Storage System

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.

The Project would have no impact on rare plants related to a substantial adverse effect on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS (*No Impact*). Although the majority of the Project site is fallowed or actively farmed agricultural land, there are intermittent and ephemeral stream courses crossing the site that not only have remained relatively undisturbed (Google, 2024), but also have the potential to host native plant species. Three plant species—San Joaquin woollythreads (*Monolopia congdonii*), Kern mallow (*Eremalche parryi* ssp. *kernensis*), and Lemmon's jewelflower (*Caulanthus lemmonii*)—occur in association with grassland habitat. Each of these species has been recorded near the site (see Figure 3.5-2)

and may be present within or near the top of bank of the stream washes where disking has not occurred. Because the stream courses containing potential habitat for rare plants are excluded from the construction area for the solar facility and energy storage system, construction and operation of these facilities would cause no impact on these species, if present; thus, no impact on rare plants would occur.

The Project would have no impact on any bat species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS. No impacts on roosting bats are anticipated because no roosting sites (such as trees or structures) would be removed as part of the Project. (*No Impact*)

Impact 3.5-1: Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status terrestrial species. (*Less than Significant with Mitigation Incorporated*)

Several special-status terrestrial wildlife species have moderate or higher potential to occur within the Project site: San Joaquin kit fox, Nelson's (San Joaquin) antelope squirrel, short-nosed kangaroo rat, western burrowing owl, blunt-nosed leopard lizard, Temblor legless lizard, California glossy snake, San Joaquin coachwhip, and Crotch's bumble bee.

Disked and actively cultivated agricultural lands on-site discourage denning and provide limited habitat for San Joaquin kit fox, Nelson's antelope squirrel, short-nosed kangaroo rat, western burrowing owl, blunt-nosed leopard lizard, Temblor legless lizard, California glossy snake, and San Joaquin coachwhip. However, the Project site includes fallow agricultural lands, peripheral grassland, and stream washes, which have the potential to support residency or movement by these species. Approximately 300 burrows were observed on the Project site during biological resources surveys, mainly along the perimeter and along the edges of the ephemeral drainages, including three burrows with signs of occupancy by burrowing owls (Appendix F). As shown in Figures 2-2, *Project Site*, and 2-3, *Project Site Plan*, Canoas Creek and Gasca Creek would be avoided with solar array fields separated from potential habitat areas. Thus, although burrowing owl is likely to be present, and San Joaquin kit fox, blunt-nosed leopard lizard, Crotch's bumble bee, and other special-status mammal or reptile species identified above could occur on the Project site in suitable habitat, direct impacts on areas that provide such habitat are not anticipated. The placement of solar arrays within cultivated agricultural fields is expected to have minimal effects on these species in this location.

If any of these species is present at the site, then construction or decommissioning activity would have the potential to cause a significant adverse impact. These effects may occur either directly (e.g., mortality or injury from vehicles or ground disturbance) or indirectly (e.g., disturbance from night lighting, which may interfere with foraging and lead to increased collision risk; or increased litter, which may draw predators). These impacts would be potentially significant.

Applicant-proposed measures (APMs) included in Chapter 2, *Project Description*, include the following:

- *APM 2.9.1: Glare and Lighting* would minimize lighting and utilize shield lighting and motion-activated lighting.
- *APM 2.9.3: Erosion and Sediment Control and Pollution Prevention* would provide erosion control during construction, which would protect the creek channels from sedimentation.

- *APM 2.9.6: Worker Environmental Awareness Training and Education Program* would require that a qualified biologist provide worker environmental awareness training to workers on the potential presence of sensitive species and actions to take if any are encountered, and site rules prohibiting litter.
- *APM 2.9.8: Preconstruction Surveys and Avoidance for Special-Status Species* provides for the completion of protocol-level preconstruction surveys and avoidance for San Joaquin kit fox and burrowing owl; non-protocol preconstruction wildlife reconnaissance surveys would be performed within 24 hours of construction to verify the absence of habitat for other special-status wildlife species within the construction footprint. Avoidance measures or relocation, in coordination with regulatory agencies, would be undertaken if any such species are found.

The implementation of these measures would protect sensitive species from impacts during construction and decommissioning. In addition, implementation of **Mitigation Measure 3.5-1: Exclusion Fencing** would protect any special-status wildlife present within the Project site boundaries during construction or decommissioning. With implementation of these APMs and Mitigation Measure 3.5-1 during construction and decommissioning, impacts on special-status terrestrial species including San Joaquin kit fox would be reduced to a less-than-significant level.

> **Mitigation Measure 3.5-1: Exclusion Fencing**
> Following implementation of APM 2.9.8: Preconstruction Surveys and Avoidance for Special-Status Species, a qualified biologist shall supervise the installation of exclusion fencing for protection of special-status terrestrial wildlife species at the top of bank of the stream courses on the Project site. The exclusion fencing shall be installed at all perimeters of the work area where wildlife may be present to prevent individuals from accessing the work area during construction or decommissioning. It shall be placed at a depth of 6 inches and backfilled with soil to prevent burrowing beneath the fence. The fence shall be maintained in good order throughout the duration of construction.
>
> **Significance after Mitigation:** Less than Significant. Implementing APM 2.9.8 and Mitigation Measure 3.5-1 would reduce potential significant impacts of Project construction and decommissioning to a less-than-significant level because impacts on special-status terrestrial wildlife 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.

Impact 3.5-2: Operation and maintenance of the Project could have a substantial adverse direct or indirect impact on special-status terrestrial species. (*Less-than-Significant Impact)*

During Project operation, vehicle and human traffic would be minimal, and the site would be fenced with chain-link fencing with space for wildlife to pass underneath, allowing access for transit and foraging by San Joaquin kit fox and other special-status terrestrial species. Continued sheep grazing activities are not expected to differ substantially from the sheep grazing activities that currently occur on the Project site, and thus are not expected to cause any substantially different impact on special-status terrestrial species. Therefore, operation and maintenance of the Project would have a less-than-significant impact on these species.

> **Mitigation:** None required.

Impact 3.5-3: The Project could have a substantial adverse direct or indirect impact on the following special-status species: Swainson's hawk, other raptors, and migratory birds. (*Less-than-Significant Impact)*

Swainson's hawks were observed foraging during site surveys, and red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*) nests were observed (Exhibit E). The Project site lacks trees, but there are suitable nest trees to the south in a hedgerow abutting the adjacent pistachio orchard. In addition to these trees, structures in the vicinity such as transmission poles could provide nest sites for Swainson's hawk or other raptors. Trees, shrubs, and tall grasses may also provide nest sites for smaller protected migratory birds. Depending on the timing of construction-related activities, construction or decommissioning activities initiated near an active nest for a Swainson's hawk, other raptor, or migratory bird could disturb birds that are nesting in the vicinity. No tree removal by the Project is anticipated, but smaller vegetation may be removed, and noise and disruption may occur near active nests. The abandonment of a nest by adult birds or the direct loss of individual nests, either of ground or shrub nesters or of birds nesting in adjacent trees or power structures, would be a significant impact. Implementation of the worker environmental awareness program (APM 2.9.6) and preconstruction nesting bird surveys and avoidance (APM 2.9.7) would minimize disturbance impacts on Swainson's hawks, other raptors, and other migratory birds. The potential direct and indirect impacts on Swainson's hawk and other birds during construction and decommissioning would be reduced to a less-than-significant level, with no mitigation required.

Swainson's hawk, red-tailed hawk, and other raptor species also may forage on the Project site. Despite the active agricultural operations, portions of the site provide habitat for prey, including gophers and other rodents. Conversion of these lands would reduce the amount of available foraging habitat and could cause hawks to range farther from their nests for prey. However, because of the large amount of suitable foraging habitat in the vicinity of the site, the impact of the loss of approximately 460 acres of Swainson's hawk foraging habitat, among millions of acres of agricultural lands in Fresno County, would be less than significant.

Collisions with Project facilities or equipment could also cause injury or mortality to migratory birds, especially raptors present on or near the site during construction, operation, or decommissioning activities. Birds may collide with transmission poles or wires, fencing, or heavy equipment, and power lines may cause electrocution. Raptors generally have the ability to avoid obstacles, but their collision or electrocution risk increases when they are engaged in activities such as territorial defense and foraging for prey (APLIC 2012).

Fresno County contains many high-voltage transmission lines and the Project would introduce additional collision hazards to the site. However, the Applicant proposes to implement APM 2.9.5: Wildlife-Friendly Design Features, which includes adherence to current APLIC design standards, including the use of avian-safe line designs, and installation of devices to make power lines visible to birds (APLIC 2006, 2012) for overhead power lines and associated structures, which would minimize the potential for avian injury and mortality during construction, operation, or decommissioning. The adherence to APLIC design standards for new power lines is considered the industry standard to minimize potential impacts on raptors from collisions or electrocution. As a result, this potential impact would be less than significant, with no mitigation required.

Mitigation: None required.

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 Wildlife or U.S. Fish and Wildlife Service.

The Project would not have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by CDFW or USFWS. (*No Impact*) The Project site consists of agricultural fields, nonnative grassland, and disturbed land, with adjacent orchard/ornamental trees (see **Appendix F**). None of these is a sensitive vegetation community. Canoas Creek, one of the intermittent streams is vegetated with upland shrubs along its length (Appendices C–E to Draft EIR Appendix F) and is not within the active Project footprint. CDFW and the Central Valley Regional Water Quality Control Board would likely regulate the Project site streams to the top of bank, which includes streamside vegetation; however, these areas would not be subject to Project impacts. Thus, the Project would cause no impact under criterion b).

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.

The Project would not have a substantial adverse effect on state or federally protected wetlands. (*No Impact*) The aquatic resource delineation conducted at the Project site found no wetland features, but it did identify ephemeral and intermittent streams: Canoas Creek, Gasca Creek, and unnamed ephemeral channels (Appendices C–E to Draft EIR Appendix F). Because the Canoas Creek stream system lacks a downstream connection to a water of the United States, it would not be regulated by the U.S. Army Corps of Engineers; however, it likely would be regulated as waters of the state by the Central Valley Regional Water Quality Control Board and by CDFW because the state regulates most waterways regardless of connection to larger waters (Appendices C–E to Draft EIR Appendix F). Nonetheless, because these streams would be completely avoided during construction, operation, and decommissioning of the Project, the Project would cause no impact under criterion c).

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.

The Project would not interfere substantially with the movement of any native resident or migratory fish species or impede the use of native wildlife nursery sites. No wildlife nursery sites or fish-bearing waters have been identified on the Project site. (*No Impact*)

Impact 3.5-4: Construction and decommissioning of the Project could interfere substantially with established native resident or migratory wildlife corridors. (*Less than Significant with Mitigation Incorporated*)

Dispersal is considered a key factor in the recovery and survival of kit fox, because kit fox populations are becoming increasingly fragmented as areas of suitable habitat are lost to development (USFWS 2010). The Project site is located in an identified satellite recovery area for San Joaquin kit fox in southern

Fresno County (USFWS 2010), with records of the species located near the site to both the east and west (CDFW 2024a). Although the majority of the Project site is in active agricultural use, the washes associated with Canoas and Gasca creeks maintain vegetative cover and may provide a movement corridor for kit fox. These stream washes may also be used by numerous other small-mammal and reptile species that cross the open plain surrounding State Route 33. Project development would avoid disturbance of these washes, and during construction and decommissioning, wildlife dispersing within this corridor would be protected from direct impacts by exclusion fencing (**Mitigation Measure 3.5-1**). Wildlife exclusion fencing would be removed after construction, and wildlife would subsequently have free access to the entire site because APM 2.9.5 includes a wildlife-friendly fence design with a gap at ground level for passage by animals. Thus, impacts on established wildlife corridors during construction and decommissioning would be less than significant with mitigation incorporated.

Mitigation: Implement Mitigation Measure 3.5-1.

Significance after Mitigation: Less than Significant. Implementing Mitigation Measure 3.5-1 along with applicable APMs would reduce the potential for the Project to interfere substantially with established wildlife movement corridors for San Joaquin kit fox and other small-mammal and reptile species because wildlife would be prevented from accessing the site during construction and decommissioning, but would be allowed across it during operation.

Impact 3.5-5: Operation and maintenance of the Project would not interfere substantially with established native resident or migratory wildlife corridors. (*Less-than-Significant Impact*)

After Project construction, the perimeter would be surrounded by a chain-link fence with space underneath to allow passage by kit foxes and other species (APM 2.9.5). Therefore, during operation and maintenance of the Project, kit fox and other terrestrial species could disperse through the solar facility site seeking forage or shade. Thus, the Project would not interfere substantially with terrestrial species' movement during operation.

The Project site is located within the avian migration route known as the Pacific Flyway. The Project would implement APM 2.9.5, which includes adherence to current APLIC design standards for overhead power lines and associated structures, to minimize the potential for avian injury and mortality during migration from collisions with Project facilities. The Project is not anticipated to affect the regional bird populations that use the Pacific Flyway. Thus, impacts on migrating birds would be less than significant.

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 3.5-6: Construction and decommissioning could conflict with local policies or ordinances protecting biological resources. (*Less than Significant with Mitigation Incorporated*)

As described in Section 3.5.1.3, the County has policies and ordinances for 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 (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 of these local policies or ordinances because these protected resources are not present within the Project site. The County also has a goal and policies for protecting fish and wildlife habitat (General Plan Goal OS-E), which requires environmental review for the protection of sensitive fish and wildlife and their habitats. There is no fish habitat at the site; thus, the Project would have no impact on fish.

General Plan Goal OS-E also protects sensitive wildlife and their habitats. The Project site and 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. Construction of the Project would have the potential to harm these species, if present. Implementing the preconstruction wildlife surveys, worker environmental awareness training, and wildlife avoidance included in APMs 2.9.5, 2.9.6, 2.9.7, and 2.9.8 and Mitigation Measure 3.5-1 would avoid or minimize potential impacts on these species and ensure compliance with General Plan Goal OS-E. Therefore, with implementation of APMs and mitigation, the Project would not conflict with, and would have a less-than-significant impact related to, local policies and ordinances protecting biological resources.

Mitigation: Implement Mitigation Measure 3.5-1.

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.

Impact 3.5-7: Construction could conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. (*Less-than-Significant Impact*)

There are no adopted natural community conservation plans in Fresno County and the only approved local, regional, or state HCP in effect at the Project site is the PG&E San Joaquin Valley Operation and Maintenance HCP. As discussed below, the Project would cause a less-than-significant related to a conflict with the PG&E San Joaquin Valley Operation and Maintenance HCP.

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

A substation would be constructed in the southeast corner of the Project site (see Figure 2-3), adjacent to a new PG&E switching station. The substation would include an electrical control building and would be connected to PG&E's 230-kilovolt switching station by an approximately 200-foot-long new transmission line. The Project's PG&E interconnection would occur within the plan area for the PG&E San Joaquin Valley Operation and Maintenance HCP (PG&E 2006). The PG&E infrastructure would be located on existing disturbed land that does not provide habitat or a movement corridor for terrestrial wildlife species. Construction in this area would include new transmission lines that could pose a risk of collision or electrocution to migrating birds. As stated above, the Applicant proposes to implement APM 2.9.5, which includes adherence to current APLIC design standards for overhead power lines and associated structures, minimizing the potential for avian injury and mortality from collisions or electrocutions from PG&E infrastructure.

The APMs described in Chapter 2, *Project Description*, are consistent with the avoidance and minimization measures and best management practices included in the HCP and would avoid or reduce impacts on nesting birds, including Swainson's hawk, and on San Joaquin kit fox that might otherwise occur. Improvements within the PG&E substation property would not be likely to affect biological resources, as they would take place within a developed area. PG&E would coordinate with the Applicant on the implementation of APMs and any mitigation measures that would apply to PG&E's construction, to minimize risks to migratory birds from collisions with lines or towers, and would further apply PG&E minimization measures from the 2006 HCP. Implementation of these measures would minimize impacts on biological resources and would avoid conflicts with an adopted HCP. Implementing Mitigation Measure 3.5-1 along with applicable APMs would reduce impacts to a less-than-significant level, because impacts on special-status species would be avoided or minimized by surveys, monitoring, exclusion fencing, and relocation if required; site workers would be trained to avoid biological resources; construction site impacts would be curtailed; and nesting birds would be avoided in season with suitable construction avoidance buffers.

Accordingly, the PG&E infrastructure would have no impact related to the significance of criteria b) and c); a less-than-significant impact with mitigation incorporated for criteria a), d), and e); and a less-than-significant impact for criterion f). The combined impacts of the Project and PG&E infrastructure with respect to biological resources would be less than significant with mitigation incorporated.

3.5.4 Cumulative Analysis

As stated above, implementation of the Project would result in no impact on riparian habitat or other sensitive natural communities or on protected wetlands. Accordingly, the Project would not cause or contribute to any cumulative impact related to these elements.

The geographic scope considered for potential cumulative impacts on biological resources includes the regional population or corridor extent for each species or community affected. The list of projects considered for the cumulative analysis is provided in Table 3.1-1, *Cumulative Projects List*. The temporal scope of the cumulative analysis is the life of the proposed facility and associated infrastructure, including the Project interconnection.

Impact 3.5-8: The Project would not cause or contribute to a potential significant cumulative impact by having 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 CDFW and USFWS. (*Less-than-Significant Impact*)

Within the Project region, cumulative projects may have potentially significant impacts on San Joaquin kit fox, blunt-nosed leopard lizard, burrowing owl, and other special-status reptiles and mammals. Identified cumulative projects include PG&E projects within existing facilities, which do not represent foraging habitat for any special-status species; and solar and battery projects, including Fifth Standard, Gates, and Key Energy, which may result in direct impacts on kit fox and other special-status terrestrial species, and the removal of potential movement or foraging habitat. However, the other large cumulative solar projects are located to the east of the Coast Ranges, and much of the land area east of Interstate 5, including the land surrounding the cumulative projects, is cultivated with few habitat islands for special-status reptiles and small mammals. Two small solar projects that are located 8–13 miles to the northwest

in the same valley as Cornucopia would have minor impacts on biological resources because of their small size and location in previously developed areas. The identified cumulative projects also contain mitigation measures and APMs to avoid or minimize any impacts on these species.

This Project is located west of Interstate 5 in an identified satellite recovery habitat area for San Joaquin kit fox established in the USFWS 5-year review (USFWS 2010). Burrows were found during site surveys with indications of burrowing owl use (Exhibit E). Special-status small mammals and reptiles have been recorded nearby (CDFW 2024a) and suitable habitat is present in the washes on-site, which would be undisturbed by the Project. The panels and infrastructure for this Project would be located within agricultural fields that are currently disked regularly and thus poorly suited as refugia habitat. The Project would also apply APMs and Mitigation Measure 3.5-1 to minimize any potential impact on kit fox or other special-status species. Therefore, the changed land use for the Project and potential impacts on kit fox and other wildlife habitat, transit, and foraging, when combined with the incremental impacts of other projects, would result in a less-than-significant contribution to cumulative impacts.

The Applicant's implementation of the APMs and PG&E's implementation of its HCP measures would protect any common raptor and other bird nests at the site from disturbance during construction. The identified cumulative projects in Table 3.1-1 also have the potential to affect suitable nesting and foraging habitat for raptors. However, the Project size is approximately 2,466 acres (1,938.22 acres fenced), among millions of acres of agricultural lands in Fresno County. Therefore, the Project (including the APMs and PG&E mitigation measures), in combination with all identified cumulative projects, would not result in a significant cumulative impact on habitat for raptors, including Swainson's hawk. Thus, the Project's incremental impact would not be cumulatively considerable.

Impacts of the Project on common and special-status migratory birds would be less than significant with mitigation. The existing and proposed solar facilities, energy projects, and park and transportation projects listed as cumulative projects would also have the potential to cause impacts on special-status birds, including injury and mortality associated with collisions during constructions and operation. However, the cumulative projects considered in this analysis are expected to attract little flyover traffic, and the level of avian fatalities that would occur at these sites is unclear. In addition, compliance with required APMs would ensure that this Project adheres to current APLIC design standards to minimize the potential for avian injury and mortality from collisions and electrocution. Because of these factors, the incremental effects of the Project on overall avian fatality from collision risk in the region would not be cumulatively considerable.

Mitigation: None required.

Impact 3.5-9: The Project would not cause or contribute to any significant cumulative effect due to substantial interference with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (*Less-than-Significant Impact*)

Without mitigation, this Project would have a significant impact on wildlife movement, given its construction adjacent to stream washes that serve as wildlife dispersal corridors. However, implementation of mitigation measures and APMs, including preconstruction surveys and the use of exclusion fencing during construction, would reduce impacts to a less-than-significant level. During

operation, wildlife movement would be facilitated by wildlife-friendly fencing design. 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 a significant cumulative impact.

Mitigation: None required.

Impact 3.5-10: The Project would not cause or contribute to any significant impact due to a conflict with General Plan Goal OS-E, which protects wildlife resources. (*Less-than-Significant Impact*)

This Project, with the implementation of mitigation, would have less-than-significant impacts due to a conflict with local ordinances because of its adherence to APMs, mitigation measures, and PG&E minimization measures, including its incorporation of wildlife-friendly design features. There is no existing significant cumulative impact on local ordinances, because the Project adheres to all applicable measures; and the incremental impacts of the Project, in combination with other present and reasonably foreseeable future projects in the cumulative scenario, would not cause a significant cumulative impact.

Mitigation: None required.

Impact 3.5-11: The Project would not cause or contribute to any significant impact due to a conflict with the provisions of the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan, an adopted habitat conservation plan. (*Less-than-Significant Impact*)

This Project would have less-than-significant impacts related to HCPs, given its adherence to PG&E HCP measures within the Project interconnection area. No other HCPs or natural community conservation plans apply to the Project site. There is no existing significant cumulative impact with respect to HCPs, because the Project would adhere to all applicable measures. The incremental impacts of the Project, in combination with other present and reasonably foreseeable future projects in the cumulative scenario, would not cause a significant cumulative impact.

Mitigation: None required.

3.5.5 References

APLIC (Avian Power Line Interaction Committee). 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006.* Washington, D.C., and Sacramento, CA: Edison Electric Institute, APLIC, and California Energy Commission.

APLIC (Avian Power Line Interaction Committee). 2012. *Reducing Avian Collisions with Power Lines: The State of the Art in 2012.* Washington, DC: Edison Electric Institute and APLIC.

CDFW (California Department of Fish and Wildlife). 2024a. California Natural Diversity Database (CNDDB) Rarefind 5. Available: https://www.wildlife.ca.gov/Data/CNDDB. Accessed August 28, 2024.

CDFW (California Department of Fish and Wildlife). 2024b. CDFW News: Western Burrowing Owl Becomes CESA Candidate. October 15, 2024. Available: https://wildlife.ca.gov/News/Archive/fish-and-game-commission-western-burrowing-owl-becomes-cesa-candidate-wildlife-prosecutor-of-the-year-named-waterfowlers-hall-of-fame-inductees-recognized. Accessed October 20, 2024.

CNPS (California Native Plant Society). 2024. Inventory of Rare and Endangered Plants. Available: http://www.rareplants.cnps.org. Accessed September 9, 2024.

Fresno County. 2024. *Fresno County General Plan Policy Document. General Plan Review.* Final. February 2024.

Google, 2024. Aerial imagery. Available: https://www.google.com/maps. Accessed September 9, 2024.

PG&E (Pacific Gas and Electric Company). 2006. *PG&E San Joaquin Valley Operation & Maintenance Habitat Conservation Plan*. Final.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation*. 2nd edition. Sacramento: California Native Plant Society.

Shuford, W.D., and T. Gardali (eds.). 2008. *California Bird Species of Special Concern.* Studies of Western Birds No. 1. Camarillo and Sacramento, CA: Western Field Ornithologists and California Department of Fish and Game. Available: https://www.contracosta.ca.gov/DocumentCenter/View/34166/Shuford-Gardali-2008-California-Bird-Species-of-Special-Concern-PDF.

USFWS (U.S. Fish and Wildlife Service). 2010. *San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation*. Sacramento, CA: Sacramento Fish and Wildlife Office. February 16, 2010.

USFWS (U.S. Fish and Wildlife Service). 2024a. Species List. Information for Planning and Conservation (IPaC) Environmental Conservation Online System. Available: https://ecos.fws.gov/ipac/. Accessed August 22, 2024.

USFWS (U.S. Fish and Wildlife Service). 2024b. San Joaquin Woolly-threads. Available: https://www.fws.gov/species/san-joaquin-woolly-threads-monolopia-congdonii. Accessed September 9, 2024.

USFWS (U.S. Fish and Wildlife Service). 2024c. Kern Mallow. Available: https://www.fws.gov/species/kern-mallow-eremalche-kernensis. Accessed September 9, 2024.

USFWS (U.S. Fish and Wildlife Service). 2024d. Blunt-Nosed Leopard Lizard. Available: https://fws.gov/species/blunt-nosed-leopard-lizard-gambelia-silus. Accessed September 9, 2024.

Zeiner, D.C., W.F. Laudenslayer Jr., and K.E. Mayer (comp. eds.). 1990. *California's Wildlife.* California Statewide Wildlife Habitat Relationships System. Sacramento: California Department of Fish and Game.

3.6 Cultural Resources and Tribal Cultural Resources

This section identifies and evaluates issues related to cultural resources and tribal cultural resources in the context of the Project. It describes the physical and regulatory setting, identifies the criteria used to evaluate the significance of potential impacts and the methods used to evaluate these impacts, and documents the impact assessment results. The County received scoping comments regarding cultural resources and tribal cultural resources (Appendix A, *Scoping Report*) and considered them in the drafting of this analysis.

This analysis is based in part on the Cultural Resources Existing Conditions Report, Cornucopia Hybrid Project, County of Fresno, California (FirstCarbon Solutions 2024), and the Supplemental Cultural Resources Memorandum for the Cornucopia Hybrid Project, Fresno County, California (Rincon 2024). The cultural resources assessment contains confidential information that is protected from public disclosure. The preparers of this Draft EIR independently reviewed these technical studies (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 preparing this Draft EIR. Copies of Project-specific correspondence related to consultation with California Native American Tribes is provided in **Appendix G**, Cultural and Tribal Cultural Resources.

3.6.1 Setting

3.6.1.1 Project Description and Location

The Project site is located near the western edge of the San Joaquin Valley at the eastern slope of the Diablo Range in unincorporated Fresno County, 4 miles west of Interstate 5 and 7.5 miles southeast of the city of Coalinga.

It encompasses approximately 2,955.4 acres of agriculturally zoned land and is generally bounded by agricultural fields. The northwest-to-southeast State Route 33 and the north-to-south Sutter Avenue both bisect the Project site. The Project site consists of generally flat terrain on undeveloped agricultural land. U.S. Natural Resources Conservation Service soil data for the Project site show moderate to well-drained soils native to the area; Cerini, Ciervo clay, Milham, Milham-Guijarral, and Panoche soils are most prevalent (FirstCarbon Solutions 2024). These soils comprise Pleistocene and Holocene alluvium, lake, playa, and terrace deposits within the central Project site; Pleistocene older alluvium, lake, playa, and terrace deposits along the western Project site; and Pliocene and Pleistocene-age sandstone, shale, and gravel deposits in the southeastern Project site (Rincon 2024).

The Project site has been used for dry-farmed (unirrigated) agricultural production of wheat and grazing fodder. The surrounding land uses are primarily agricultural, with some residential development to the east. Little uncultivated natural habitat exists in the local area, as the land around the Project site is cultivated and fallow or used for grazing.

3.6.1.2 Environmental Setting

Natural Environment

The southern San Joaquin Valley has a semi-arid climate, with mild winters, extremely hot and dry summers, and an average of 5−6 inches yearly rainfall. This type of climate is subject to recurring and sometimes long-lasting droughts.

Historically, the San Joaquin Valley contained abundant natural resources and hosted various natural communities, including freshwater lakes and marshlands, scrub brush, grassland, and foothill woodlands. Deer, elk, smaller mammals, waterfowl, reptiles, amphibians, and numerous fish species were plentiful in prehistory and the early historic era. The once expansive wetlands enabled the vast growth of vegetation, including tule. Blue oak, valley oak, California sycamore, and Fremont cottonwood thrived within the eastern foothills.

The Central Valley pre-contact archaeological record is divided into three periods: Paleo-Indian (11,550 to 8550 cal B.C.[1]), Archaic (8550 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 (8550 to 5550 cal B.C.), Middle Archaic (5550 to 550 cal B.C.), and Upper Archaic (550 cal B.C. to cal A.D. 1100) (Rosenthal et al. 2007).

Paleo-Indian (11,550–8550 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. Little other evidence of human occupation during the Paleo-Indian period is available for the Central Valley.

Lower Archaic (8550–5550 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 (5550–550 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 showed 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. The use of

[1] The “cal” prefix indicates that the date reported is the result of radiocarbon calibration using tree ring data.

mortars and pestles for food processing was prevalent, except along the valley margins, where handstones and millingslabs remained dominant (Rosenthal et al. 2007).

Emergent (cal A.D. 1100 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 European explorers appeared at this time. Research on Emergent Period sites in the San Joaquin Valley has been limited; only one cultural pattern, the Panoche Complex (circa A.D. 1500–1850), 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 before A.D. 1400, perhaps by force, as indicated by skeletal remains with fatal wounds inflicted by projectile points (Arkush 1993). Historically, the Yokuts have been divided into three cultural-geographical groupings: Northern Valley, Southern Valley, and Foothills (Arkush 1993). Based on written records regarding the territorial boundaries of these three cultural-geographical groupings, the Project area lies within the ancestral land boundaries of the Southern Valley Yokuts people.

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 1978). The nearest known villages to the Project site include *Tachi*, located on the northeastern shore of Tulare Lake in the general vicinity of the present-day community of Huron, and *Wowol*, on the southern shore of Tulare Lake, near the present-day community of Hanford (Wallace 1978).

Today, the Southern Valley Yokuts, represented by the Kitanemuk & Yowlumne Tejon Indians, Santa Rosa Rancheria Tachi Yokut Tribe, Table Mountain Rancheria, Tejon Indian Tribe, and Tule River Indian Tribe, are interested in protecting and preserving their historic and pre-contact past as well as their modern traditional lifeways.

Historic Setting

Widespread exploration of the Central Valley by non-native 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, 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 became a stagecoach and mail route and an important route for cattle ranchers. In the valley, the route largely corresponds to modern-day Interstate 5.

Mexico gained independence in 1821 and began to secularize the missions and promote the settlement of Alta California by issuing land grants and enacting liberal colonization laws. In 1848, gold was discovered at Sutter's Mill, resulting in a large influx of immigrants hoping to make their fortunes. California was ceded to the United States in that same year, after the Mexican-American War ended, and

officially became a state in 1850. Mexico's public lands became United States public lands and were surveyed, sectioned, and made available for sale and settlement (Hoover et al. 1990).

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 discovery of oil in Coalinga in the western portion of Fresno County created an economic boom in Coalinga from 1890 to 1940. By 1910, the Coalinga Oil Fields, operated by the Standard Oil Company, was the largest producing oil plant in California (FirstCarbon Solutions 2024).

Today, the San Joaquin Valley has a wide variety of agricultural enterprises, with farms ranging from small to large industrial operations 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).

3.6.1.3 Cultural Resources and Tribal Cultural Resources Identified within the Study Area

Record Search Results

On May 1, 2023, a records search was completed at the Southern San Joaquin Valley Information Center at California State University, Bakersfield, that included the Project site and a 0.5-mile search radius (study area). The current inventories of the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), the California Historic Landmarks list, the California Points of Historical Interest list, and the California Built Environment Resource Directory for Fresno County were reviewed to determine the existence of previously documented historical resources (FirstCarbon Solutions 2024).

The results from the records search indicate that no cultural resources have been recorded within the 0.5-mile search radius or within the Project site (FirstCarbon Solutions 2024). Five survey reports are on file within the 0.5-mile radius, four of which include portions of the Project site.

Native American Heritage Commission Records Search

On May 2, 2023, FirstCarbon Solutions sent a letter to the Native American Heritage Commission (NAHC) to determine whether any sacred sites are listed on its Sacred Lands File for the Project site. A response was received on May 30, 2023, indicating that the Sacred Lands File search produced a negative result for sacred sites in the Project site.

The NAHC included a list of 14 tribal representatives (Rincon 2024). A letter containing Project information and a request for additional information was sent to each tribal representative on June 8, 2023. A response was received from the Picayune Rancheria of the Chukchansi Indian Tribe on January 4, 2024, stating that they had no comments on the Project (Appendix G). No additional responses have been received to date.

Archaeological Field Surveys

From August to December 2023, three pedestrian surveys were conducted for cultural resources. All proposed development areas were closely inspected for culturally modified soils or other indicators of

potential historic or pre-contact Native American resources. Survey conditions were documented using digital photographs and field notes. During the surveys, the team examined all areas of the exposed ground surface for pre-contact Native American cultural materials (e.g., fire-affected rock, milling tools, worked stone tools, toolmaking debris, ceramics); soil discoloration and depressions that might indicate the presence of a cultural midden; animal and human bones; as well as features indicative of the former presence of historic-era structures or buildings (e.g., postholes, standing exterior walls, foundations) or historic debris (e.g., glass, metal, ceramics) (FirstCarbon Solutions 2024; Rincon 2024). Soil visibility was almost 100 percent, comprising light brown sandy soils (Munsell 10 YR 6/2) with inclusions of basalt, quartz, Franciscan chert, slate, shale, schist, and river stones.

Results

Seven pre-contact isolated artifacts consisting of Franciscan chert cores and debitage were identified during the survey (FirstCarbon Solutions 2024; Rincon 2024). The isolates, designated CHP-1, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7, and CHP-8, are in areas highly disturbed by agricultural activity. There is no evidence that any of these isolates are associated with events that have made a significant contribution to the broad patterns of the Central Valley region or California's history (Criterion 1) or that they are associated with the lives of persons important in our past (Criterion 2). The isolates do not embody any distinctive characteristics (Criterion 3). Isolated chert cores and debitage are common in the Central Valley and generally do not add to the knowledge of the region's past. In addition, all of the isolated artifacts do not appear to be in their original place due to substantial past agricultural disturbances, and the research potential of the isolates has been exhausted by their initial recordation (Criterion 4). Therefore, the seven pre-contact isolates identified on the Project site are recommended not eligible for listing in the California Register as historical resources or unique archaeological resources, and no further consideration of these isolates is necessary.

One pre-contact Native American site designated CHP-2, consisting of a Franciscan chert projectile point fragment and a concentration of approximately 30 pieces of Franciscan chert debitage, was also identified during the surface survey. The resource is outside of the area of disturbance for the Project. Based on the concentration of artifacts, this resource is considered eligible for the California Register under Criterion 1, for events that have made a significant contribution to the Central Valley region's history, and under Criterion 4, for the potential to provide information important to the history of the region. Therefore, for the purposes of this Project, resource CHP-2 is considered eligible for the California Register as a historical resource.

An abandoned well and several isolated glass and brick fragments were identified on the Project site in the vicinity of two former structures previously located west of the intersection of Sutter Avenue and State Route 33, as shown on historic maps from 1912 through 1939. There is no indication from the surface survey that subsurface historic-era components exist in the vicinity of these identified resources. Isolated historical refuse is common in areas such as agricultural fields and along roadsides, and areas of refuse by themselves are not eligible as a historical resource or unique archaeological resource under Criteria 1–4 as defined by CEQA. Therefore, the historic-era resources identified on the Project site are recommended not eligible for listing in the California Register as historical resources or unique archaeological resources, and no further consideration is necessary.

3.6.1.4 Potential for Unknown Buried Cultural Resources

Soils on the Project site are classified as follows: Pleistocene and Holocene alluvium, lake, playa, and terrace deposits within the central portion of the site; Pleistocene older alluvium, lake, playa, and terrace deposits along the site's western edge; and Pliocene and Pleistocene sandstone, shale, and gravel deposits in the southeastern corner of the Project site (Rincon 2024).

The 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. The researchers constructed a regional model to predict archaeological site locations based on two environmental factors: proximity to water and landform slope. The model assumes that past human activity, and thus the formation of archaeological sites, occurred more frequently in flat areas close to water sources, such as rivers, lakes, and springs. Flat landforms would be expected to be more attractive for occupation than sloped landforms, and to be 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 central portion and eastern half of the Project site are bisected by Canoas Creek, a perennial water source that heightens the buried site sensitivity of this portion of the Project site. Historic aerial photos indicate that most of the Project site has been used for agricultural production since at least 1940. Due to decades of associated ground disturbances, agricultural activities may have displaced subsurface resources up to 2 feet below the surface. The integrity of any surficial resource present within the plow zone may have been affected by the existing conditions; however, resources below these depths could retain integrity.

Based on the factors outlined above, the subsurface archaeological sensitivity for pre-contact and historic-era archaeological resources ranges from low to high but generally has a moderate to high potential (Rincon 2024).

3.6.1.5 Regulatory Setting

Federal

National Register of Historic Places

The National Register was established by the National Historic Preservation Act, 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" (Code of Federal Regulations Title 36, §60.2). The National Register recognizes both historic-period and pre-contact archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the National Register, 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 1990):

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 National Register are automatically considered eligible for listing in the California Register.

State

The State of California, through the State Historic Preservation Officer, consults on implementation of the National Historic Preservation Act; it also oversees statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation, as an office of the California Department of Parks and Recreation, implements these policies and maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the State's jurisdiction.

California Environmental Quality Act

The State of California implements the provisions of CEQA through its statewide comprehensive cultural resource surveys and preservation programs. Typically, a resource must be more than 50 years old to be considered as a potential historical resource. The California Office of Historic Preservation advises recordation of any resource 45 years or older because there is commonly a 5-year lag between resource identification and the date that planning decisions are made.

Historical Resources

The CEQA Guidelines recognize that a *historical resource* includes: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in Public Resources Code §5020.1(k) or identified as significant in a historical resource survey meeting the requirements of Public Resources Code §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.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Public Resources Code §21084.1 and CEQA Guidelines §15064.5 apply. If an archaeological site does not meet the criteria for a historical resource contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Public Resources Code §21083, pertaining to unique archaeological resources.

Unique Archaeological Resources

As defined in Public Resources Code §21083.2, a *unique archaeological resource* is 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:

- 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.
- Is directly associated with a scientifically recognized important pre-contact or historic event or person.

The CEQA Guidelines note that if an archaeological resource is not a unique archaeological, historical resource, or tribal cultural resource, then the effects of the project on those cultural resources shall not be considered a significant effect on the environment (CEQA Guidelines §15064.5[c][4]).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Public Resources Code §5024.1[a]). The criteria for eligibility for the California Register are based upon the criteria for listing in the National Register (Public Resources Code §5024.1[b]), as defined above. Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a cultural resource must be significant at the local, state, and/or federal level under one or more of the following four criteria:

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.

A resource eligible for the California Register must be of sufficient age and retain enough of its historic character or appearance (integrity) to convey the reason for its significance. Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in the National Register and those formally determined eligible for the National Register.
- California Registered Historical Landmarks from No. 770 onward.

- Those California Points of Historical Interest that have been evaluated by the California Office of Historic Preservation and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated for the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register).
- Individual historic resources.
- Historic resources contributing to historic districts.
- Historic resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.
- Tribal cultural resources.

California Public Resources Code Section 21074

In September 2014, the California Legislature enacted Assembly Bill (AB) 52, which added provisions to the Public Resources Code regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American Tribes. In particular, AB 52 requires lead agencies to analyze project impacts on tribal cultural resources (Public Resources Code §§21074 and 21083.09). The law defines tribal cultural resources in Public Resources Code §21074. AB 52 also 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, and 21082.3).

Public Resources Code §21084.3 addresses mitigation for tribal cultural resources impacts as follows:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

    1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

    2) Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

        A. Protecting the cultural character and integrity of the resource.

        B. Protecting the traditional use of the resource.

        C. Protecting the confidentiality of the resource.

3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

4) Protecting the resource.

California Public Resources Code Section 5097.98

Public Resources Code §5097.98, as amended, provides procedures in the event that human remains of Native American origin are discovered during project implementation. Public Resources Code §5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery be adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. Public Resources Code §5097.98 further requires that the NAHC, upon notification by a county coroner, designate and notify a Most Likely Descendant regarding the discovery of Native American human remains. The Most Likely Descendant has 48 hours from the time of being granted access to the site by the landowner to inspect the discovery and provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the landowner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

California Public Resources Code Section 5097.99

Public Resources Code §5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any such artifacts or human remains is guilty of a felony punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell or dissect or with malice or wantonness is also guilty of a felony punishable by imprisonment.

California Native American Historic Resource Protection Act

This California Native American Historic Resource Protection Act of 2002 (Public Resources Code §5097.995 et seq.) imposes civil penalties, including imprisonment and fines up to $50,000 per violation, for persons who unlawfully and maliciously excavate upon, remove, destroy, injure, or deface a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register.

California Health and Safety Code Section 7050.5

Section 7050.5 of the California Health and Safety Code protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery. Public Resources Code §5097.98 (reiterated in CEQA Guidelines §15064.59[e]) also identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

Government Code Sections 6254(r) and 6254.10

These sections of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to “Native American graves, cemeteries, and sacred places

maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency."

Local

Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan (Fresno County 2024) contains several goals and policies relevant to protecting cultural resources within the Project site and surrounding area. The Historical, Cultural, and Geological Resources section of the Open Space and Conservation Element provides the following goals and 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, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the county's valued assets that have contributed to past county events, trends, styles of architecture, and economy.
>
> ***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 that may impact buildings or structures. For a project projected on a property that includes buildings, structures, objects, sites, landscapes, or other features that are 45 years of age or older at the time of permit application, the project applicants shall be responsible for preparing and implementing the recommendations of a historical resources evaluation completed by qualified cultural resources practitioners.
>
> ***Policy OS-J.4: Cultural Resources Protection and Mitigation*.** The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.
>
> ***Policy OS-J.5: Archeological Sites Confidentiality.*** The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the location of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.
>
> ***Policy OS-J.6: Native American Consultation.*** The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.7: Historical Sites Inventory. The County shall maintain an inventory of all sites and structures in the county determined to be of historical significance (Index of Historic Properties in Fresno County).

Policy OS-J.10: Cultural Resource Preservation. The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.

3.6.2 Significance Criteria

The Project would result in a significant impact on cultural resources or tribal cultural resources if it would do any of the following:

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 §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 §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 subdivision (c) of Public Resources Code §5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code §5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

3.6.3 Direct and Indirect Effects

3.6.3.1 Methodology

Architectural/Structural Resources

Impacts on architectural resources are typically assessed by identifying any activities that could affect resources identified as historical resources for the purposes of CEQA. Properties identified as historical resources under CEQA include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (California Register Criteria 1, 2, 3, and 4) and that retain sufficient historical integrity to convey their significance. Criterion 4 is often applied to the evaluation of historic-era archaeological resources, and not to architectural resources.

Archaeological Resources

The significance of most pre-contact and historic-era archaeological sites (i.e., whether they are "historical resources") is usually assessed under California Register Criterion 4. This criterion stresses the importance of the information potentially contained within the site. However, archaeological resources

may also be assessed under Criteria 1, 2, and 3, for their association with important events, people, or construction attributes. Archaeological resources may also be significant under CEQA as *unique archaeological resources*, which are defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions.

Once a resource has been identified as a CEQA historical resource (either architectural or archaeological), it then must be determined whether the project's impacts would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines §15064.5[b]). A *substantial adverse change* in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historic resource would be materially impaired" (CEQA Guidelines §15064[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in the California Register (CEQA Guidelines §15064.5[b][2][A]).

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including Public Resources Code §5097.98 and Health and Safety Code §7050.5. This analysis considers impacts, including intentional disturbance, mutilation, or removal of interred human remains.

Tribal Cultural Resources

Impacts on tribal cultural resources are assessed in consultation, as applicable, with the affiliated Native American Tribe in accordance with Public Resources Code §21080.3. This analysis considers whether the Project would cause damaging effects to any tribal cultural resource, including archaeological resources and human remains.

3.6.3.2 Significance Criteria

The Project would result a significant impact on cultural resources or tribal cultural resources if it would do any of the following:

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 §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 §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 §5024.1(c).

In applying the criteria set forth in Public Resources Code §5024.1(c), Fresno County, as the CEQA Lead Agency, has considered the significance of the resource to a California Native American Tribe.

3.6.3.3 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Ground-disturbing activities related to the solar facility and energy storage system include installing solar panel helical piles or metal pier supports, fencing, underground electrical components and telecommunications; excavating on-site detention or retention basins; constructing restroom facilities with septic tanks; and constructing roadways within and leading to the facility.

Criterion a) Whether the Project would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5.

Criterion b) Whether the Project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5.

The following discussion focuses on architectural resources. Archaeological resources, including archaeological resources that are potentially historical resources according to CEQA Guidelines §15064.5, are addressed under Impact 3.6-1. Project construction would not affect known historical resources, because no resources that meet CEQA's definition of a historical resource are known to be located within the Project site. Therefore, the Project would result in no impact on known historical resources. (*No Impact*)

Impact 3.6-1: The Project could cause a substantial adverse change in the significance of a newly discovered archaeological resource pursuant to Section 15064.5. (*Less than Significant with Mitigation Incorporated*)

This impact discusses archaeological resources, both historical resources according to CEQA Guidelines §15064.5 and unique archaeological resources as defined in Public Resources Code §21083.2(g). A significant impact would occur if the Project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration.

Seven pre-contact isolates as well as historic-era isolated artifacts and an abandoned well were documented during the surveys on the Project site. None of these resources are considered eligible for listing in the California Register and none meet the CEQA definition of a unique archaeological or historical resource. No further consideration of these resources is necessary for the Project.

One pre-contact archaeological resource, designated CHP-2, was identified during the survey effort within the Project site; however, the resource was identified outside of the area of ground disturbance or any Project components for the Project. For the purposes of this Project, the resource is considered eligible for listing in the California Register and is therefore considered a historical resource. Because this resource is outside of the area of ground disturbance, it is not anticipated to be affected during ground-disturbing activities. Though not anticipated based on Project design, impacts on CHP-2 would be considered significant if they were to occur. To further reduce the potential for a significant adverse impact, **Mitigation Measures 3.6-1**, **3.6-2**, and **3.6-3** are recommended.

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 3.6-4**, impacts on any newly discovered archaeological resources would be reduced to less than significant.

Mitigation Measures

Mitigation Measure 3.6-1: Cultural Resources Awareness Training
Before the start of ground disturbance, the construction crew shall participate in on-site training on the proper procedures to follow if cultural resources are uncovered during the Project excavations, site preparation, or other related activities. This Worker Environmental Awareness Program shall include a comprehensive discussion of applicable laws and penalties under the law; samples or visuals of artifacts that might be found in the vicinity of the Project site; a discussion of what such artifacts may look like when partially buried or wholly buried and then freshly exposed; a discussion of what pre-contact and historic-era archaeological deposits look like at the surface and when exposed during construction; and instruction that employees are to halt work in the vicinity of a discovery (within 100 feet). This information shall be provided in an informational brochure that outlines reporting procedures in the event of a discovery and shall be provided to all individuals working on-site.

Mitigation Measure 3.6-2: Archaeological Monitoring and Discovery Plan
Before permitted ground-disturbing activities start, an archaeological monitoring and discovery plan shall be prepared by a qualified archaeologist who meets or exceeds the Secretary of the Interior's Standards for Archeology. The monitoring plan shall include a description of the archaeological sensitivity of the Project and archaeological monitoring methodology, which shall entail the monitoring of all ground-disturbing activities within 100 feet of areas of elevated sensitivity, such as those stated in **Mitigation Measure 3.6-3**. In addition, the monitoring plan shall enable the authority of the monitor to halt construction should a discovery be made; provide contact information upon this discovery; define the resource types typically present within the area; provide a research design should a discovery be made; and provide the protocols for unanticipated discoveries, review and approval protocols, and dispute resolution.

Mitigation Measure 3.6-3: Archaeological Monitoring
Archaeological monitor(s) and Native American monitor(s) shall be on-site during permitted ground-disturbing activities occurring within 100 feet of areas of elevated archaeological sensitivity, including the boundaries of site CHP-2, the location of once-erected historic structures, as well as Canoas Creek and surrounding streambeds. Activities requiring an archaeological monitor include clearing and grubbing, mass grading, and excavation with mechanical equipment. Ground-disturbing activities requiring hand tools shall be monitored in these areas. During monitoring, the monitors shall examine the work areas for the presence of pre-contact artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic-era debris (e.g., metal, glass, ceramics), and/or soil discoloration that might indicate the presence of a cultural midden. Each monitor shall maintain a daily log documenting ground-disturbing activity, work locations, description, and provenience of any archaeological discoveries (if any), and any necessary action items for monitoring.

Archaeological monitoring may be reduced or terminated at the discretion of the archaeologist in consultation with the County, as warranted by conditions such as encountering bedrock, the presence of fill soil, or negative findings during initial ground disturbance. If monitoring is reduced to spot-checking, spot-checking shall occur when ground disturbance moves to a new

location or when ground disturbance will extend to depths not previously excavated (unless those depths are within bedrock).

Mitigation Measure 3.6-4: Unanticipated Discovery of Cultural Resources
In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 100 feet of the find shall halt, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology shall be contacted immediately to evaluate the resource. If the qualified archaeologist determines the resource to be pre-contact, then a Native American representative shall also be contacted to participate in evaluating the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for California Register eligibility shall be completed. If the resource proves to be eligible for the California Register and significant impacts on the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the CEQA Guidelines §15126.4(b)(3)(C) (California Code of Regulations Title 14, §15126.4[b][3][C]). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce significant impacts on cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. Fresno County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CEQA Guidelines §15126.4(b)(3)(C).

Significance after Mitigation: Less than Significant. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce the impact to a less-than-significant level by ensuring that archaeological resources are treated appropriately, including data recovery or other treatment programs, if identified during Project ground-disturbing activities.

Criterion c) Whether the Project would disturb any human remains, including those interred outside of formal cemeteries.

Impact 3.6-2: The Project could disturb human remains, including those interred outside of formal cemeteries. (*Less than Significant with Mitigation Incorporated*)

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 Measures 3.6-1**, **3.6-2**, **3.6-3**, and **3.6-4** would ensure that any human remains encountered are appropriately addressed, thus reducing any potential impacts to less than significant.

Additionally, if human remains are identified, the Applicant would have to comply with Government Code §27460 et seq., which requires that ground-disturbing activities halt until the county coroner can determine whether the remains are subject to the provisions of §27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner, and cause of death; and the required recommendations concerning the treatment and disposition of the human remains have been made. Pursuant to California Health and Safety Code §7050.5, the coroner shall make a

determination within 48 hours of notification of the discovery of the human remains. If the coroner determines that the remains are not subject to their authority and recognizes or has reason to believe that they are those of a Native American, the coroner shall contact the NAHC within 24 hours. With compliance with existing, independently enforceable law, the Project's potential impact related to the inadvertent discovery of human remains would be less than significant.

Mitigation: Implement Mitigation Measures 3.6-1 through 3.6-4.

Significance after Mitigation: Less than Significant. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce the impact to a less-than-significant level by ensuring that if human remains are identified during Project ground disturbance the appropriate protocol is following including contacting the County Coroner and the NAjhuHC.

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 §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 §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 §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 §5024.1(c).

Impact 3.6-3: The Project could cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code §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. (*Less than Significant with Mitigation Incorporated*)

The County sent letters to 14 culturally affiliated Native American Tribes on the NAHC list for Fresno County. One Tribe responded, stating that it had no comments on the Project. No additional responses have been received to date.

As described above, no known tribal cultural resource either listed or determined eligible for listing in the California Register or included in a local register of historical resources as defined in Public Resources Code §5020.1(k), pursuant to Public Resources Code §21074(a)(1), exist within the Project site. While unlikely, the potential exists for cultural materials or human remains that may be tribal cultural resources to be uncovered during ground-disturbing activities, resulting in a substantial adverse change in the significance of a tribal cultural resource that would be significant. With implementation of **Mitigation Measures 3.6-1**, **3.6-2**, **3.6-3**, and **3.6-4**, any encountered archeological resources that are considered tribal cultural resources would be addressed appropriately, reducing potential impacts to a less-than-significant level.

Mitigation: Implement Mitigation Measures 3.6-1 through 3.6-4.

Significance after Mitigation: Less than Significant. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce the impact to a less-than-significant level by ensuring that archaeological resources are treated appropriately, including data recovery or other treatment programs, if identified during Project ground-disturbing activities.

Pacific Gas and Electric Company Infrastructure

Ground-disturbing activities related to the Pacific Gas and Electric Company (PG&E) infrastructure include the construction of an approximately 2-acre switching station and the possible installation of one power pole in the southeast corner of the Project site. The construction activities associated with the PG&E infrastructure 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 §§7052 and 7050.5, Public Resources Code §21074(a) (AB 52), and the CEQA Guidelines (California Code of Regulations Title 14, §15064.4). The PG&E infrastructure also would be required to comply with the same cultural resources mitigation measures as the rest of the Project components. Therefore, because archaeological resources, human remains, and/or tribal cultural resources could be inadvertently discovered, the implementation of **Mitigation Measures 3.6-1, 3.6-2**, **3.6-3**, and **3.6-4** would reduce the potential impact to less than significant. The combined impacts of the Project, including the PG&E infrastructure, would be less than significant.

3.6.4 Cumulative Analysis

Impact 3.6-4: The Project would contribute to a less-than-significant cumulative impact on cultural resources and tribal cultural resources. ***(Less than Significant with Mitigation Incorporated)***

The geographic scope for cumulative impacts on 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.

The temporal scope for cumulative impacts on 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 in Section 3.6.2, *Significance Criteria*, were exceeded.

There is no indication in Section 3.6.1.2, *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 could contribute. 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 to any potential cumulative impact. Thus, even if it is conservatively assumed that a potential significant cumulative effect exists, the negligible impact remaining after the implementation of recommended mitigation measures would not be cumulatively considerable. The Project would contribute to a less-than-significant cumulative impact on archaeological and tribal cultural resources.

Mitigation: Implement Mitigation Measures 3.6-1 through 3.6-4.

Significance after Mitigation: Less than Significant. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce the impact to a less-than-significant level by ensuring that archaeological resources are treated appropriately, including data recovery or other treatment programs, if identified during Project ground disturbing activities.

Impact 3.6-5: The Project would not cause a cumulatively considerable contribution to any significant impact due to damage to previously unidentified human remains. ***(Less than Significant)***

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 or any of the cumulative projects could contribute. The Project would contribute to a less-than-significant cumulative impact related to the discovery of human remains.

Mitigation: None required.

3.6.5 References

Arkush, B.S. 1993. "Yokuts Trade Networks and Native Culture Change in Central and Eastern California." *Ethnohistory* 40(4):619–640.

CAGenWeb. 2013. *Moraga Explores the Valley*. Available: http://www.cagenweb.com/sanjoaquin/moraga.pdf. Accessed September 10, 2024.

Caltrans (California Department of Transportation). 2007. *A Historical Context and Archaeological Research Design for Agricultural Properties in California*. Division of Environmental Analysis, Sacramento, CA.

FirstCarbon Solutions. 2024. *Cultural Resources Existing Conditions Report, Cornucopia Hybrid Project, County of Fresno, California,* written for Fresno County Department of Public Works and Planning, February 6, 2024.

Fresno County. 2024. *Comprehensive General Plan Review and Revision.* Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps. Accessed September 8, 2024.

Hoover, M. B., H. E. Rensch, E. G. Rensch, W. N. Abeloe. 1990 [Revised 2002]. *Historic Spots in California.* Revised by Douglas E. Kyle. Palo Alto, CA: Stanford University Press.

Meyer, J., D. C. Young, and J. S. Rosenthal, 2010. *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9, Cultural Resources Inventory of Caltrans District 6/ 9 Rural Conventional Highways.* EA 06-0A7408 TEA Grant. Prepared by Far Western Anthropological Research Group, Inc., Davis, CA. Prepared for California Department of Transportation, District 6, Fresno, CA.

Moratto, Michael J. 1984. *California Archaeology*. San Diego, California: Smithsonian Press.

Rincon. 2024. *Supplemental Cultural Resources Memorandum for the Cornucopia Hybrid Project, Fresno County, California,* written for BayWa r.e. Solar Projects, LLC, July 2, 2024.

Rosenthal, J.S., G.G. White, and M.Q. Sutton. 2007. "The Central Valley: A View from the Catbird's Seat." In *California Prehistory: Colonization, Culture, and Complexity*, ed. T.L. Jones and K.A. Klar, 147−163. Lanham, MD: AltaMira Press.

U.S. Department of the Interior. 1990. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* Prepared by the National Park Service, Cultural Resources.

Wallace, W.J. 1978. "Southern Valley Yokuts." In *California*, ed. R.F. Heizer, 448–461. *Handbook of North American Indians*, Vol. 8, gen. ed. W.C. Sturtevant. Washington, D.C.: Smithsonian Institution.

3.7 Energy

This section identifies and evaluates issues related to energy efficiency and consumption, including electricity ("energy" for purposes of this EIR) and transportation fuels. 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, asking that Project-related impacts on air quality be reduced through incorporation of design elements such as measures that increase energy efficiency (Appendix A, *Scoping Report*).

This analysis is based in part on the *Air Quality and Greenhouse Gas Emissions Technical Report for the Cornucopia Hybrid Project* prepared by Rincon Consultants (Appendix E). 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 (in combination with other materials included in the formal record) to inform the preparation of this Draft EIR (ESA 2024).

3.7.1 Setting

3.7.1.1 Study Area

The study area for Project impacts related to energy includes the state of California for purposes of overall energy use and consistency with energy-related plans, the Pacific Gas and Electric Company (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.

3.7.1.2 Environmental Setting

State Energy Setting

Total energy usage in California was 6,882 trillion British thermal units (Btu) in 2022, which equates to an average of 189 million Btu per capita. These figures place California second among the nation's 50 states in total energy use and 48th in per capita consumption. Of California's total energy usage, the breakdown by sector is roughly 43 percent transportation, 23 percent industrial, 18 percent residential, and 17 percent commercial. Electricity and natural gas in California are consumed primarily by stationary users such as residences and commercial and industrial facilities, whereas petroleum-based fuel consumption is generally accounted for by transportation-related energy use (EIA 2024).

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation sources. Approximately 70 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 30 percent, is imported from the Pacific Northwest and the Southwest. In 2022, California's in-state electricity generation was derived from natural gas (47 percent); small hydroelectric resources, wind, and solar (36 percent); nuclear sources (9 percent); large hydroelectric resources (7 percent); renewable resources that include geothermal, biomass, and coal (less than 1 percent); and petroleum coke/waste heat (less than 1 percent) (CEC 2023a).

Electricity

In 2022, total system electric generation for California (in-state plus imports) was 287,220 gigawatt-hours (GWh), up 3.4 percent from 2021's total generation of 277,764 GWh. Electricity from non–carbon dioxide emitting electric generation categories (i.e., nuclear, large hydroelectric, and renewable generation) accounted for 54 percent of total in-state generation for 2022, compared to 52 percent in 2021. However, California's 2021 in-state generation of 194,127 GWh increased in 2022 by 4.5 percent to 203,257 GWh. In-state hydroelectric generation increased by 21 percent compared to 2021 generation levels (3,045 GWh). Net imports for 2022 (83,962 GWh) were virtually unchanged from 2021 levels (83,636 GWh) (CEC 2023a).

In recent years, electricity demand has been relatively flat as energy efficiency programs have resulted in end-use energy savings and as customers have installed behind-the-meter[1] solar photovoltaic (PV) systems that directly displace utility-supplied generation. In 2018 (the most recent year for which these specific data are available), behind-the-meter solar generation was estimated to be approximately 25,000 GWh, a substantial increase from 2017. The strong growth in solar PV has had a measurable impact on utility-served load and, consequently, on total system electric generation (CEC 2022).

Transportation Fuels

The energy consumed by the transportation sector accounts for roughly 43 percent of California's total energy consumption (EIA 2024). Gasoline and diesel, both derived from petroleum (also known as crude oil), are the two most common fuels used for vehicular travel. According to the U.S. Energy Information Administration (EIA), the state relies on petroleum-based fuels for 98 percent of its transportation needs (EIA 2024). Gasoline accounted for about 52 percent of California's total transportation sector energy consumption, 53 percent of California's total transportation sector petroleum consumption, and 6 percent of total U.S. energy transportation sector consumption (EIA 2024). California is the largest consumer of gasoline in the United States. Approximately 23 percent of California's crude oil is obtained from within the state, about 16 percent comes from Alaska, and the remaining 61 percent comes from foreign lands (CEC 2023b).

In 2022, gasoline sales in California amounted to approximately 11.5 billion gallons, and diesel fuel sales amounted to approximately 1.8 billion gallons (CEC 2023b). The California Energy Commission (CEC) forecasts that demand for gasoline in California will range from 12.1 billion to 12.6 billion gallons in 2030, with most of the demand generated by light-duty vehicles. While the models show an increase in light-duty vehicles with population and income growth over the forecast horizon, total gasoline consumption is expected to decline, primarily because of increasing fuel economy (stemming from federal and state regulations) and gasoline displacement from the increasing market penetration of zero-emission vehicles.

California has about 3 percent of the nation's total crude oil reserves, and it is the seventh-largest crude oil producer among the states (EIA 2024). Crude oil is moved from area to area within California through a network of pipelines that carry it from both onshore and offshore oil wells to the refineries that are in the San Francisco Bay Area, the Los Angeles area, and the Central Valley. Currently, 14 petroleum

[1] *Behind-the-meter solar generation* refers to on-site solar generation facilities that are designed for a single building or facility. Because the power is generated and used on-site, it is not connected to the regional power grid, and thus is referred to as "behind the meter."

refineries operate in California, processing approximately 1.71 thousand barrels of crude oil per day (CEC 2023b).

Other transportation fuel sources used in California include alternative fuels, such as methanol and denatured ethanol (alcohol mixtures that contain no less than 70 percent alcohol), natural gas (compressed or liquefied), liquefied petroleum gas, hydrogen, and fuels derived from biological materials (i.e., biogas).

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 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.

Pacific Gas and Electric Company 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,[2] and energy storage facilities, and to help create a platform for the development of resilient grid technologies (PG&E 2023).

In 2020, PG&E generated and/or procured a total of 35,838 GWh of electricity.[3] Of this total, PG&E owns approximately 7,662 megawatts (MW) of generating capacity, itemized below (see **Table 3.7-1**). The remaining electrical power is purchased from other sources in and outside of California.

TABLE 3.7-1
PG&E-OWNED ELECTRICITY GENERATING SOURCES (2023)

Source	Generating Capacity (MW)
Nuclear (Diablo Canyon—two reactors)	2,240
Hydroelectric	3,845
Fossil Fuel–Fired	1,400
Fuel Cell	183
Solar Photovoltaic (13 units: 12 in Fresno County, 1 in Kings County)	152
Total	**7,820**

Notes: MW = megawatts; PG&E = Pacific Gas and Electric Company
Source: PG&E 2023

[2] Generally, *distributed generation resources* refers to a variety of small, grid-connected or distribution system-connected devices that together achieve electrical generation and storage functions, typically using renewable energy sources.

[3] This amount excludes electricity provided to direct access customers and Community Choice Aggregation entities that procure their own supplies of electricity.

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.

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 3.7-2**, 37 percent of PG&E's energy deliveries were from renewable energy sources in 2023 (PG&E 2023).

TABLE 3.7-2
PG&E 2023 RENEWABLE ENERGY SOURCES

Source	Percent of Total Energy Portfolio
Solar	6
Wind	24
Bioenergy	4
Geothermal	--
RPS-Eligible Hydroelectric	3
Total	**37**

Notes: PG&E = Pacific Gas and Electric Company; RPS = Renewables Portfolio Standard
Source: PG&E 2023

Electricity Consumption

Table 3.7-3 shows electricity consumption by sector in the PG&E service area based on the latest available data from the CEC. As shown in the table, PG&E delivered approximately 78 billion kilowatt-hours (kWh) in 2022, of which approximately 9.7 billion kWh were consumed by the industrial sector.

TABLE 3.7-3
ELECTRICITY CONSUMPTION IN THE PG&E SERVICE AREA (2022)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh (GWh)							
7,506	26,928	4,056	10,092	1,814	27,210	281	77,887

Notes: GWh = gigawatt-hours; kWh = kilowatt-hours; PG&E = Pacific Gas and Electric Company
Source: CEC 2023c

In Fresno County, approximately 8.4 billion kWh of electricity was consumed in 2022, with approximately 5.2 billion kWh consumed by non-residential uses (CEC 2023c).

Local Energy Infrastructure

The Project site is located immediately adjacent to the existing 230-kilovolt PG&E Templeton-Gates transmission line. No other energy infrastructure currently exists within the Project vicinity.

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 2023b).

3.7.1.3 Regulatory Setting

Federal

Federal policies and regulations set broad energy efficiency standards and incentives, such as for consumer products and automobile and fuel efficiency. Such requirements, as those listed below, tend to be applicable to the manufacturing sector and are not directly applicable to the Project. Nonetheless, they are listed here for informational purposes.

National Energy Conservation Policy Act

The National Energy Conservation Policy Act serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements. The National Energy Conservation Policy Act established energy-efficiency standards for consumer products and includes a residential program for low-income weatherization assistance, grants and loan guarantees for energy conservation in schools and hospitals, and energy-efficiency standards for new construction. Initiatives in these areas continue today.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005 sets equipment energy efficiency standards. It also seeks to reduce reliance on nonrenewable energy resources and provides incentives to reduce current demand on these resources. For example, under the act, consumers and businesses can attain federal tax credits for constructing energy-efficient buildings, improving the energy efficiency of commercial buildings, and purchasing fuel-efficient appliances and products, including hybrid vehicles. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), signed in 2007, strengthens the key energy management goals for the federal government and sets more challenging goals than the National Energy Policy Act of 2005. The energy reduction and environmental performance requirements of Executive Order 13423 were expanded upon in Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance), and signed in 2009.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 sets federal energy management requirements in several areas. These requirements include energy reduction metrics for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, and energy-efficient product procurement. Reductions in petroleum use are also required, including by setting automobile

efficiency standards and an increase in alternative fuel use. This act also amends portions of the National Energy Conservation Policy Act.

Corporate Average Fuel Economy Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration and U.S. Environmental Protection Agency jointly administer the standards. The U.S. Congress has specified that these standards must be set at the "maximum feasible level" with consideration given to: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[4]

State

Warren-Alquist Act

The 1975 Warren-Alquist Act 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.

California Energy Action Plan

California's *2008 Energy Action Plan Update* revised the *2005 Energy Action Plan II,* which is the state's principal energy planning and policy document. The plan maintains the goals of the original *Energy Action Plan*, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. First-priority actions to address California's increasing energy demands are to promote energy efficiency, demand response (i.e., reducing customer energy usage during peak periods to address power system reliability and support the best use of energy infrastructure), and use of renewable power sources. To the extent that these strategies are unable to satisfy increasing energy and capacity needs, the plan supports clean and efficient fossil-fuel fired generation.

State of California Integrated Energy Policy

In 2002, the Legislature enacted Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan biannually for electricity, natural gas, and transportation fuels for the California Energy Report. SB 1389 requires the CEC to prepare a biennial Integrated Energy Policy Report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. This report provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state's economy, and protect public health and safety (Public Resources Code §25301[a]). The Integrated Energy Policy Report has replaced the Energy Action Plan as the chief program intended to provide a comprehensive statewide energy strategy to guide energy investments, energy-related regulatory efforts, and greenhouse gas reduction measures.

[4] For more information on the Corporate Average Fuel Economy standards, see https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.

The 2023 Integrated Energy Policy Report Update (CEC 2024) provides the results of CEC assessments on a variety of energy issues facing California, including:

- Embedding Equity and Environmental Justice at the CEC
- California Energy Planning Library
- California Energy Demand Forecast
- Energy Reliability
- Western Electricity Integration
- Gasoline Cost Factors and Price Spikes
- Role of Hydrogen in California's Clean Energy Future
- Fossil Gas Transition
- Distributed Energy Resources

Energy Storage

The California Public Utilities Commission (CPUC) set an energy storage procurement framework with a 1,325 MW storage target by 2020 for investor-owned utilities as required by Assembly Bill (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 2024).

Renewable Portfolio Standard

The RPS Program, as updated in 2018 (SB 100), required California to procure 60 percent of its electricity from renewable sources by 2030 and specifies that the California Air Resources Board should plan for 100 percent eligible renewable energy resources and carbon-free sources by 2045. SB 1020, signed on September 16, 2022, revised SB 100, instead requiring that renewable energy resources and zero-carbon resources supply 90 percent of all retail electricity sales to end-use customers by December 31, 2035; 95 percent by December 31, 2040; and 100 percent of by December 31, 2045. SB 1020 also requires the supply of 100 percent renewable electricity and zero-carbon resources to serve all state agencies by December 31, 2035 (Public Utilities Code §§399.11, 399.30, and 454.33.)

Title 24–California Energy Efficiency Standards

The Energy Efficiency Standards for residential and non-residential buildings specified in Title 24, Part 6 of the California Code of Regulations were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated approximately every 3 years to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The current standards became effective on January 1, 2023.

Local

Integrated Strategies for a Vibrant and Sustainable Fresno County Report

In 2011, the Integrated Strategies for a Vibrant and Sustainable Fresno County Report developed new strategies to increase the resilience of both human and natural communities to near-term and long-term stressors and changes in Fresno County (ClimateWise 2011). The report identifies strategies to support agricultural uses including the desire to increase renewable energy production on farms. Specifically, the report suggests that local governments should reduce barriers to on-farm renewable energy production, including reassessing zoning and permitting, and should encourage smart growth and green building by increasing energy efficiency and renewable energy.

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 Solar Facility 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 minimizing impacts on existing agricultural operations.

3.7.2 Significance Criteria

The Project would result in a significant impact related to energy if it would do any of the following:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.7.3 Direct and Indirect Effects

3.7.3.1 Methodology

Consistent with Public Resources Code §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 (O&M), and decommissioning. The impact analysis is informed by Appendix F of the CEQA Guidelines (*Energy Conservation*). 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. Emissions details used to support the Project energy consumption estimates presented in this section are presented in Section 3.9, *Greenhouse Gas Emissions*. 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.

The analysis in this section utilizes the assumptions identified in the *Air Quality and Greenhouse Gas Emissions Technical Report for the Cornucopia Hybrid Project* prepared by Rincon Consultants (Appendix E.1). Because the California Emissions Estimator Model (CalEEMod) program does not calculate the amount of fuel that would be consumed for construction-related activities, additional calculations were conducted and are summarized below and provided in Appendix E.2, *Cornucopia*

Hybrid Project Fuel Use Calculations. The fuel use estimates assume that water would be delivered to the site using water trucks. If the well located north of State Route 33 (South Lost Hills Road) is improved to provide on-site water for construction and operational needs, then the energy calculations in Appendix E.2 would be conservative estimations, as off-site water delivery would not be needed and a reduction in water truck fuel usage would occur.

3.7.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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 3.7-1: Project construction, operation and maintenance, and decommissioning and site reclamation would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption or use of energy. (*Less-than-Significant Impact*)

Discussions of the fuel and electricity usage that would be associated with the Project are provided below.

Construction

The use of construction tools and equipment, vendor truck trips, and vehicle trips generated from construction workers traveling to and from the site would consume energy during Project construction. The Project's estimated fuel and electricity consumption during construction is summarized in **Table 3.7-4**. Project construction is expected to consume a total of approximately 515,052 gallons of diesel fuel from construction equipment and truck trips, and approximately 186,115 gallons of gasoline from construction worker vehicle trips. Annualized Project fuel use during construction would represent approximately 0.12 percent of diesel and 0.0165 percent of gasoline sold in Fresno County in 2022 (CEC 2023b).

TABLE 3.7-4
PROJECT ENERGY CONSUMPTION DURING CONSTRUCTION

Type (use)	Quantity	Units	Energy (MMBtu)[a]	Annualized Energy (MMBtu)
Diesel (construction equipment and trucks)	515,052	gallons	70,758	21,772
Gasoline (worker vehicles)	186,115	gallons	22,374	6,884
Electricity (water-related)	299,131	kWh	1,020	314
Total	**-**	**-**	**94,152**	**28,970**

Notes: kWh = kilowatt-hours; MMBtu = million British thermal units

a. Based on U.S. Energy Information Administration conversion factors (https://www.eia.gov/energyexplained/units-and-calculators/energy-conversion-calculators.php).

Source: Data compiled by Environmental Science Associates in 2024 (Appendix E.2); EIA 2024.

Construction activities and corresponding fuel energy consumption would be temporary and localized because 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 require the use of construction methods or equipment that would be less energy efficient than those used at other similar solar project construction sites in other parts of the county.[5] 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 for water use during construction. Electricity during construction was estimated based on water demand for construction that would amount to a total of up to 540 acre-feet. Electricity associated with the supply, distribution, and treatment of water used for construction would be approximately 299,131 kWh over the approximately 39-month construction period.[6] This electricity consumption would be approximately 0.0001 percent of the electricity consumption for the mining and construction sector in PG&E's service area in 2022 (CEC 2023c). 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 3.7-4, the total energy consumption during the construction period would be approximately 94,152 million British thermal units (MMBtu), which is approximately 0.000001 percent of statewide energy use as of 2022. 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 3.7-5**. Electricity would be required during O&M—for example, for lighting and for powering of heating, ventilation, and air conditioning 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, and a general light industry–type building, as CalEEMod does not provide demand factors specifically for solar facilities. The Project's electricity consumption from these sources was estimated to be approximately 1,249,007 kWh per year. Additionally, as a conservative estimate of electrical emissions, the energy storage system (ESS) facility is anticipated to be charged from the grid. The 300 MW system would be charged once per day during off-peak hours. The system is estimated to draw 438,000 megawatt-hours per year. This portion of the Project's electricity consumption was estimated to be approximately 1,494,456 megawatt-hours of electricity per year.

Additionally, the average water use during the Project's O&M phase is estimated to be approximately 31 acre-feet per year for PV solar panel washing and general maintenance. Electricity associated with the supply, distribution, and treatment of water used for O&M would be approximately 17,172 kWh per year.[7]

[5] Because energy consumption is directly proportional to generation of greenhouse gas emissions, the Project's construction-related greenhouse gas 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).

[6] Based on the CalEEMod energy intensity of 0.0017 kWh per gallon for supply, distribution, and treatment of water for Fresno County.

[7] Based on the CalEEMod energy intensity of 0.0017 kWh per gallon for supply, distribution, and treatment of water for Fresno County.

TABLE 3.7-5
PROJECT ANNUAL ENERGY CONSUMPTION DURING OPERATION

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Electricity			
O&M building	1,249,007	kWh/year	4,261
Grid Charging of Battery ESS	438,000	MWh/year	1,494,456
Water-related	17,172	kWh/year	58.6
Gasoline			
O&M employee vehicles	6,800	gallons/year	817
Total	**-**	**-**	**1,499,593**

Notes: ESS = battery energy storage system; kWh = kilowatt-hours; MMBtu = million British thermal units; MWh = megawatt-hours; O&M = operation and maintenance

a. Based on U.S. Energy Information Administration conversion factors.

Source: Data compiled by Environmental Science Associates in 2024 (Appendix E.2); EIA 2024.

Using the proposed installed tracker capacity of 300 MW alternating current, the solar facility is anticipated to generate approximately 438 million kWh per year (Appendix E.1). Thus, the amount of electricity required during Project operation would be 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.

O&M activities would require the use of light-duty trucks and other light equipment for maintenance, module washing, and deployment and collection of sheep. 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. Three to four semi-trucks, with 400–500 sheep in each load, would transport the sheep to the site in February or March each year. The same number of trucks would be used to remove the sheep from the site near the end of June or early July. Thus, as discussed in Section 3.7.1, although permanent 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 yields a conservative estimate of 6,800 gallons of gasoline required annually during Project operation. Project fuel use during O&M would represent approximately 0.002 percent of gasoline sold in Fresno County in 2022 (CEC 2023a). This gasoline use during Project operation would not constitute a wasteful, inefficient, or unnecessary use of energy.

Additionally, as shown in Table 3.7-5, the Project's total annual energy consumption would be approximately 5,137 MMBtu. The Project also would be anticipated to generate up to approximately 438 million kWh per year, or 1,494,456 MMBtu, which represents approximately 0.02 percent of statewide energy use in 2022. Additionally, the proposed battery ESS would extend the period of time each day that the Project could contribute PV-generated energy to the electrical grid and sustain its own

operational consumption. Therefore, the energy use 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 10- to 12-month time frame immediately preceding expiration of the requested 35-year use permit for the Project (with the option to extend 5 years), the site would begin to be decommissioned, reclaimed, and restored in accordance with a County-approved reclamation plan, a draft of which is provided in Appendix E.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 Technical Report for the Cornucopia Hybrid Project* prepared by Rincon Consultants (Appendix E.1) conservatively assumed that decommissioning would use the same fleet of equipment as modeled for construction, but for a shorter duration (12 months).

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 3.7-6**. Project decommissioning is expected to consume a total of approximately 159,843 gallons of diesel fuel from equipment use and truck trips and approximately 5,319 gallons of gasoline from worker vehicle trips. Project fuel use during decommissioning would represent approximately 0.18 percent of diesel and 0.001 percent of gasoline sold in Fresno County in 2022 (CEC 2023a).

TABLE 3.7-6
PROJECT ENERGY CONSUMPTION DURING DECOMMISSIONING

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Diesel (construction equipment and trucks)	159,843	gallons	21,959
Gasoline (worker vehicles)	5,319	gallons	639
Electricity (water-related)[b]	299,131	kWh	1,020
Total	**-**	**-**	**23,618**

Notes: kWh = kilowatt-hours; MMBtu = million British thermal unit

a. Based on U.S. Energy Information Administration conversion factors.
b. Decommissioning water use conservatively assumed to be equivalent to construction.

Source: Data compiled by Environmental Science Associates in 2024 (Appendix E.2); EIA 2024.

The analysis assumes that electricity would be required during decommissioning for purposes similar to those required for construction. Thus, electricity use during decommissioning was assumed to be 299,131 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 2022 (CEC 2023c).

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.[8] Additionally, as shown in Table 3.7-6, the total

[8] See Footnote 2 for the list of projects considered.

energy consumption during the decommissioning period would be approximately 23,618 MMBtu, which is approximately 0.000001 percent of statewide energy use as of 2022. This energy use during Project decommissioning would not constitute a wasteful, inefficient, or unnecessary use of energy. This impact would be less than significant.

Impact Conclusion

Although the Project would require energy for construction, O&M, and decommissioning, as discussed above, the electricity production of the Project would far outweigh the Project's energy demand. Therefore, the overall energy impact of the Project would be beneficial.

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 would involve the construction, O&M, 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 power grid that 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 ESS 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 ESS 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 3.7-1, the Project would require diesel and gasoline fuel, as well as minimal amounts of electricity throughout the life of the Project. However, these energy inputs would be offset by the anticipated Project generation of approximately 438,000,000 kWh per year.

In terms of mobile energy usage, as described above, the National Highway Traffic Safety Administration 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 by model year 2016. In the course of more than 30 years, the National Energy Conservation Policy Act's 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 miles per gallon for light-duty vehicles is expected to reach 50.4 miles per gallon by 2031 (NHTSA 2024). Vehicles used by Project construction, maintenance, and decommissioning workers to travel to and from the 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 the regulations (California Code of Regulations Title 24, 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, the 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 the California Green Building Standards Code (known as the CALGreen Code) during construction and decommissioning activities, which requires 65 percent construction and demolition waste diversion.

Impact Conclusion

Because 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)***

Pacific Gas and Electric Company Infrastructure

To accommodate the Project, PG&E would construct a switching station in the southeast corner of the Project site (see Figure 2-3), located directly adjacent to the Project substation. The switching station footprint would be up to approximately 2 acres. Construction of the switching station is expected to occur between January 2027 and April 2028. Switching station construction was included in the construction energy estimates provided in Table 3.7-4, and would result in a relatively minor fraction of the total construction-related energy consumption, which is estimated to be approximately 515,052 gallons of diesel fuel from construction equipment and truck trips and approximately 186,115 gallons of gasoline from construction worker vehicle trips. For these reasons, the PG&E infrastructure would have a less-than-significant impact under criterion a) and no impact under criterion b).

3.7.4 Cumulative Analysis

The geographic context for potential cumulative impacts related to electricity is PG&E's service area. Specifically, for equipment and vehicle fuel use, the geographic context is within the Project's construction equipment delivery and workers' average travel radius (conservatively assumed to be up to 150 miles for vendors and approximately 40 miles for workers), because 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, O&M, and decommissioning; therefore, it could also contribute to potential cumulative impacts during any of these phases.

With regard to 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.[9] Severe

[9] 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 because of a planned outage (ABC30 2021).

weather conditions have increased in both frequency and intensity, including hotter than normal heat waves, heavier 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 ESS would contribute to electrical grid reliability and would also assist California utilities in meeting their obligations under state energy storage targets associated with 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 40–150 miles of the Project site could require gasoline or diesel, but they would not combine with the fuel demands of the Project to cause a significant adverse cumulative impact related 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 related to consumption or use of fuel would not be cumulatively considerable and the cumulative impact would be less than significant.

With regard to criterion b), as discussed above, there would be no impact with respect to a conflict with or obstruction of a state or local plan for renewable energy or energy efficiency. Therefore, the Project would not cause or contribute to any potential cumulative impact in this regard. No cumulative impact would occur.

3.7.5 References

ABC30. 2021. "Power Outage Hits at Least 15,000 Homes Across Central Valley." Available: https://abc30.com/central-valley-15000-homes-without-power-pge-outage/10811048/. Accessed September 17, 2024.

CAISO (California Independent System Operator Corporation). 2016. "Fast Facts: What the Duck Curve Tells Us About Managing a Green Grid." Available: http://www.caiso.com/Documents/Flexibleresourceshelprenewables_FastFacts.pdf. Accessed September 17, 2024.

CEC (California Energy Commission). 2022. California Energy Report. Available: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2022-integrated-energy-policy-report-update. Accessed September 17, 2024.

CEC (California Energy Commission). 2023a. 2022 Total System Electric Generation. Available: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation. Accessed October 7, 2024.

CEC (California Energy Commission). 2023b. California Annual Retail Fuel Outlet Report Results (CEC-A15). Energy Assessments Division. August 16, 2023.

CEC (California Energy Commission). 2023c. Electricity Consumption by Entity. Available: https://ecdms.energy.ca.gov/elecbyutil.aspx. Accessed September 17, 2024.

CEC (California Energy Commission). 2024. *2023 Integrated Energy Policy Report Update Highlights*. February 2024. Available: https://www.energy.ca.gov/sites/default/files/2024-05/2023_Integrated_Energy_Policy_Report_Highlights_ADA.pdf. Accessed October 7, 2024.

Climate Central. 2014. Blackout: Extreme Weather, Climate Change and Power Outages. Available: https://assets.climatecentral.org/pdfs/PowerOutages.pdf. Accessed September 17, 2024.

ClimateWise. 2011. *Integrated Strategies for a Vibrant and Sustainable Fresno County*. Prepared by Geos Institute and Local Government Commission. Available: www.geosinstitute.org/images/stories/pdfs/Publications/ClimateWise/FresnoClimateWiseFinal.pdf.

CPUC (California Public Utilities Commission). 2024. Energy Storage. Available: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/energy-storage. Accessed September 17, 2024.

EIA (U.S. Energy Information Administration). 2024. California State Energy Profile, August 15, 2024. Available: https://www.eia.gov/state/print.php?sid=CA. Accessed September 17, 2024.

ESA (Environmental Science Associates). 2024. *EIR 8511 Cornucopia Hybrid Project: Air Quality and GHG Technical Study Review.* June 28, 2024.

Fresno County. 2014. *Tranquility Solar Generating Facility Project Draft Environmental Impact Report.* May 2014.

Fresno County. 2017. Fresno County Solar Facility Guidelines. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities. Accessed September 17, 2024.

Fresno County. 2018. *Little Bear Solar Project Draft Environmental Impact Report.* August 2018.

Fresno County. 2020. *Fifth Standard Solar Project Complex Draft Environmental Impact Report.* February 2020.

NHTSA (National Highway Traffic Safety Administration). 2024. Summary of Fuel Economy Performance. June 7, 2024.

PG&E (Pacific Gas and Electric Company). 2023. Form 10-K, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2022, February 25, 2023. Available: https://investor.pgecorp.com/financials/sec-filings/default.aspx. Accessed September 17, 2024.

3.8 Geology, Soils, and Paleontological Resources

This section identifies and evaluates issues related to geology, soils, and paleontological resources, including seismicity, erosion, geologic stability and features (including paleontological features), and expansiveness and other characteristics of soils that could indicate risks to life or property. 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 geology, soils, and paleontological resources (Appendix A, *Scoping Report*).

This analysis is based on a paleontological records search and report and supplemental memorandum (Appendix H, *Paleontological Resources*) and a Land Evaluation and Site Assessment report (see Appendix D). The preparers of this Draft EIR independently reviewed the Web Soil Survey Application from the U.S. National Resources Conservation Service (NRCS 2024a) 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.

3.8.1 Setting

3.8.1.1 Study Area

The study area for this analysis of potential impacts related to geology, soils, and paleontological resources is limited to the Project site and its immediately adjacent area, with the exception of seismic impacts. This is because Project impacts relative to geology, soils, and paleontological resources are generally site-specific and depend on the nature of the existing geologic and soil units. For example, erosion impacts would be limited to the Project site and possibly the immediately adjacent properties.

For seismic impacts, the study area extends to the San Andreas fault zone, located approximately 30 miles west of the Project site. This is the extent of the study area relative to seismicity because seismic shaking from active faults such as the San Andreas fault zone could adversely affect the Project site.

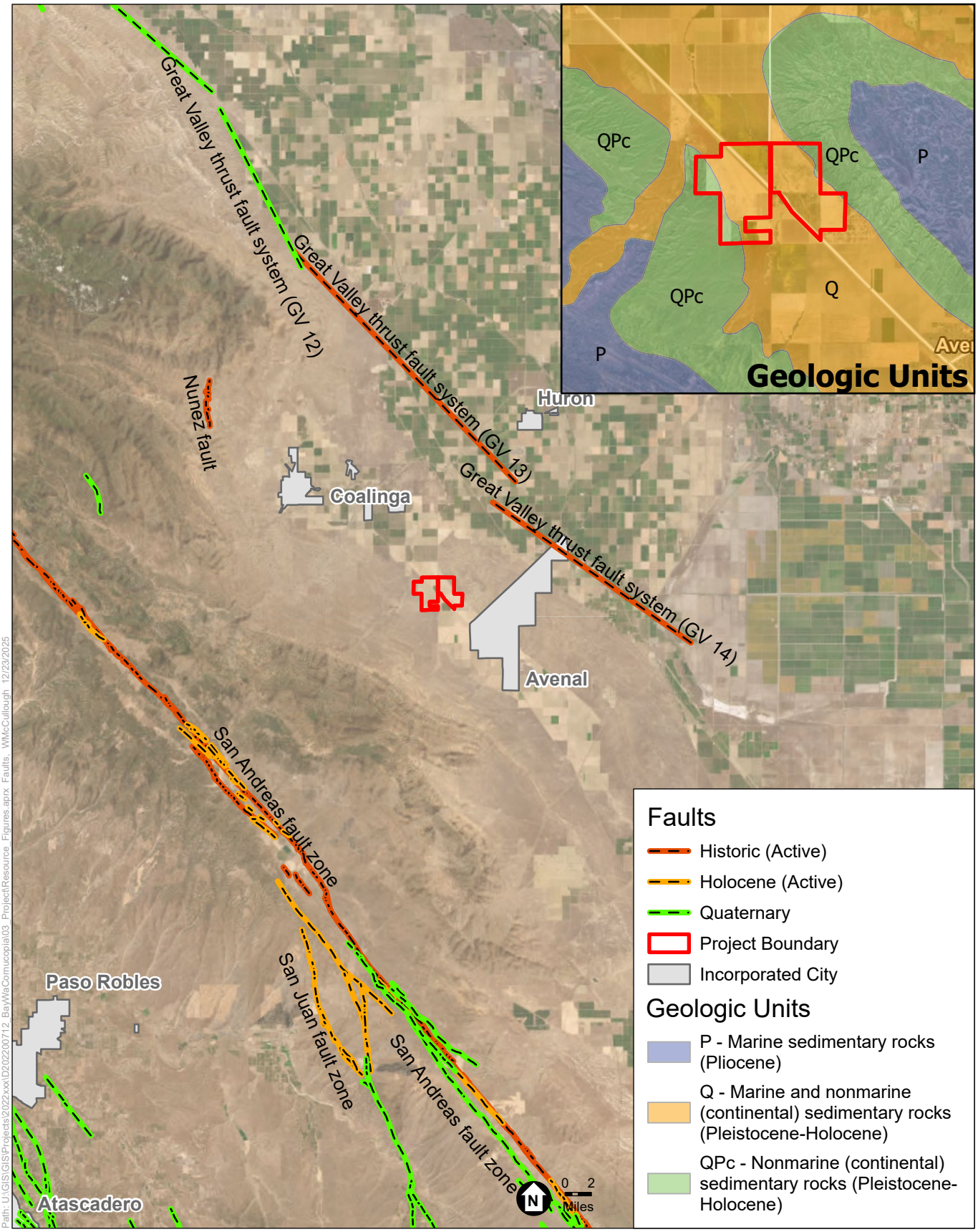
3.8.1.2 Environmental Setting

Regional Geology

The Project site is approximately 3 miles northwest of the city of Avenal and 9 miles southeast of the city of Coalinga in unincorporated Fresno County in the San Joaquin Valley (see Figure 2-1 in Chapter 2, *Project Description*). The Project site is within the southern portion of the Great Valley Geomorphic Province, an alluvial plain in central California that is approximately 50 miles wide and 400 miles long. 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 and the Coast Ranges (CGS 2002).

Geologic Units

The entire Project site and surrounding half-mile adjacent area are on Holocene alluvium (Qa) and the Pleistocene to Pliocene Tulare Formation (QTl) (see **Figure 3.8-1**). Older (Holocene to late Pleistocene) alluvium (Qoa) and the late Pliocene San Joaquin Formation (Tsj) are adjacent to but outside of the Project footprint (Appendix H).



Fuente: ESA, 2024; CGS, 2021

Cornucopia Hybrid Project

Figure 3.8-1
Faults and Geologic Units

ESA

Geologic and Seismic Hazards

Earthquake Faults and Seismicity

No known faults cross the Project site. Multiple fault systems are present in the region outside of the Project site, as shown on Figure 3.8-1. The closest known Holocene-active faults are the Great Valley 13 (GV 13) and Great Valley 14 (GV 14) faults of the Great Valley thrust fault system;[1] GV 13 is approximately 7.5 miles northeast of the Project site and GV 14 is approximately 5 miles east of the Project site (CGS 2024a). The active San Andreas fault zone is approximately 15 miles to the west and the active Nunez fault zone is 16 miles northeast of the Project site (CGS 2024a).

Fault Rupture

The Project site is not within an established Earthquake Fault Zone (EFZ) as delineated on an EFZ map, and as required by the Alquist-Priolo Earthquake Fault Zoning Act. The nearest EFZs are the Nunez and San Andreas fault zones, 16 miles and 15 miles away, respectively (CGS 2024b).

The California Earthquake Hazards Zone Application (EQ Zapp) is an interactive map available on the California Geological Survey website. The EQ Zapp allows users to view all available earthquake hazard zone data, including earthquake fault, liquefaction, and earthquake-induced landslide zones. Although there has been historic movement within the Great Valley thrust fault system such as the 1983 Coalinga earthquake (USGS 2017), it has not been mapped as an EFZ according to EQ Zapp (CGS 2024b). Faults are designated EFZ if they display evidence of surface rupture within the last 11,700 years (CGS 2018).

Ground Shaking

Ground shaking due to fault rupture is widely known to cause extensive damage to life and property. The extent of the damage varies by event and is determined by several factors, such as magnitude and depth of the earthquake, distance from the epicenter, duration and intensity of the shaking, underlying soil and rock types, and the integrity of structures.

There is a potential for strong seismic ground shaking because of the presence of the nearby Great Valley thrust, Nunez, and San Andreas fault systems. The 2014 Working Group on California Earthquake Probabilities[2] concluded that there is a 95 percent probability that a moment magnitude (M_W)[3] 6.7 earthquake or higher could occur in Northern California within the next 30 years, with the San Andreas fault zone as a likely source (Field et al. 2015).

According to the ShakeMap, which corresponds with the earthquake planning scenario generated by the U.S. Geological Survey (USGS), if a M_W 7.1 event were to occur on the Great Valley fault, the Project site may experience strong to very strong ground shaking, with heavy damage expected (USGS 2016). These data are based on historical earthquakes in the region.

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1 *GV 13* and *GV 14* are the naming conventions for the specific, individual sections of the Great Valley thrust fault system. The abbreviation "GV" stands for "Great Valley" (i.e., "GV 13" stands for "Great Valley 13 fault") (USGS 1996).

2 This is a working group composed of seismologists from the U.S. Geological Survey, California Geological Survey, Southern California Earthquake Center, and California Earthquake Authority.

3 The Richter Scale measures earthquake size using data from seismograph stations, initially specific to southern California. The Moment Magnitude Scale is a physical quantity proportional to the slip on the fault multiplied by the area of the fault surface that slips; it is related to the total energy released in the earthquake (USGS 2024b).

Liquefaction and Lateral Spreading

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.

According to the EQ Zapp, the Project site is not within or near any known liquefaction zone (CGS 2024b). Furthermore, soil at the Project site is sandy and well-drained, and groundwater on-site is far below the surface (NRCS 2024a). The Project site is located within the Pleasant Valley Subbasin, where the depth to groundwater ranges from approximately 350 feet below ground surface in the south to 500 feet below ground surface in the north (Pleasant Valley GSA et al. 2022).

Landslides

Landslides are one of the various types of downslope movements in which rock, soil, or 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 Project site and surrounding flat area (Appendix H). However, Canoas Creek is located near and in the Project site. Portions of the creek are mildly susceptible to landslides, as indicated by the USGS Landslide Hazard Program. However, no landslides have been documented on the Project site (USGS 2024a).

Subsidence and Ground Settlement

Land subsidence is the gradual settling or sudden sinking of the earth's surface due to subsurface movement of earth materials (USGS 1996). Subsidence in alluvial valley areas is typically associated with groundwater or petroleum withdrawal, and regional ground subsidence or settlement is typically caused by compaction of alluvial deposits or other saturated deposits in the subsurface (USGS 1996).

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. Based on data from the California Department of Water Resources, the Project site has not observed any subsidence (DWR 2024).

Soil Types

The primary soils in the analysis area are Ciervo clay, Milham-Guijarral association, and Cerini clay loam (**Figure 3.8-2** and Appendix D). The soils present on-site are identified in **Table 3.8-1**.

TABLE 3.8-1
MAPPED SOIL UNITS AND SOIL PROPERTIES

Alignment Map Unit Symbol	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Wind Erodibility Group[1]	Slope Percent	Stability Concerns[2]
479	hp0g	Cerini clay loam	C	6	0–2	Expansive
478	2vnd5	Cerini sandy loam	C	3	0–2	None
459	hp02	Ciervo clay	C	4	0–2	Expansive
445	2ss8v	Excelsior sandy loam	A	3	0–2	None
960	hp2l	Excelsior sandy substratum–Westhaven association, flooded	B	3	0–2	None
406	hnzd	Guijarral sandy loam	A	3	2–5	None
404	hnzb	Milham-Guijarral association	A	3	5–15	None
451	2ss91	Milham sandy loam	C	3	0–2	None
452	hnzz	Milham sandy loam	C	3	2–5	None
442	2ycb1	Panoche clay loam	C	6	0–2	Expansive
436	2ycb2	Panoche loam	C	6	0–2	Expansive
438	hnzq	Panoche loam	B	6	2–5	Potentially Expansive
437	hnzp	Panoche sandy loam	B	3	0–2	Expansive
412	hnzf	Yribarren clay loam	C	6	0–2	Expansive

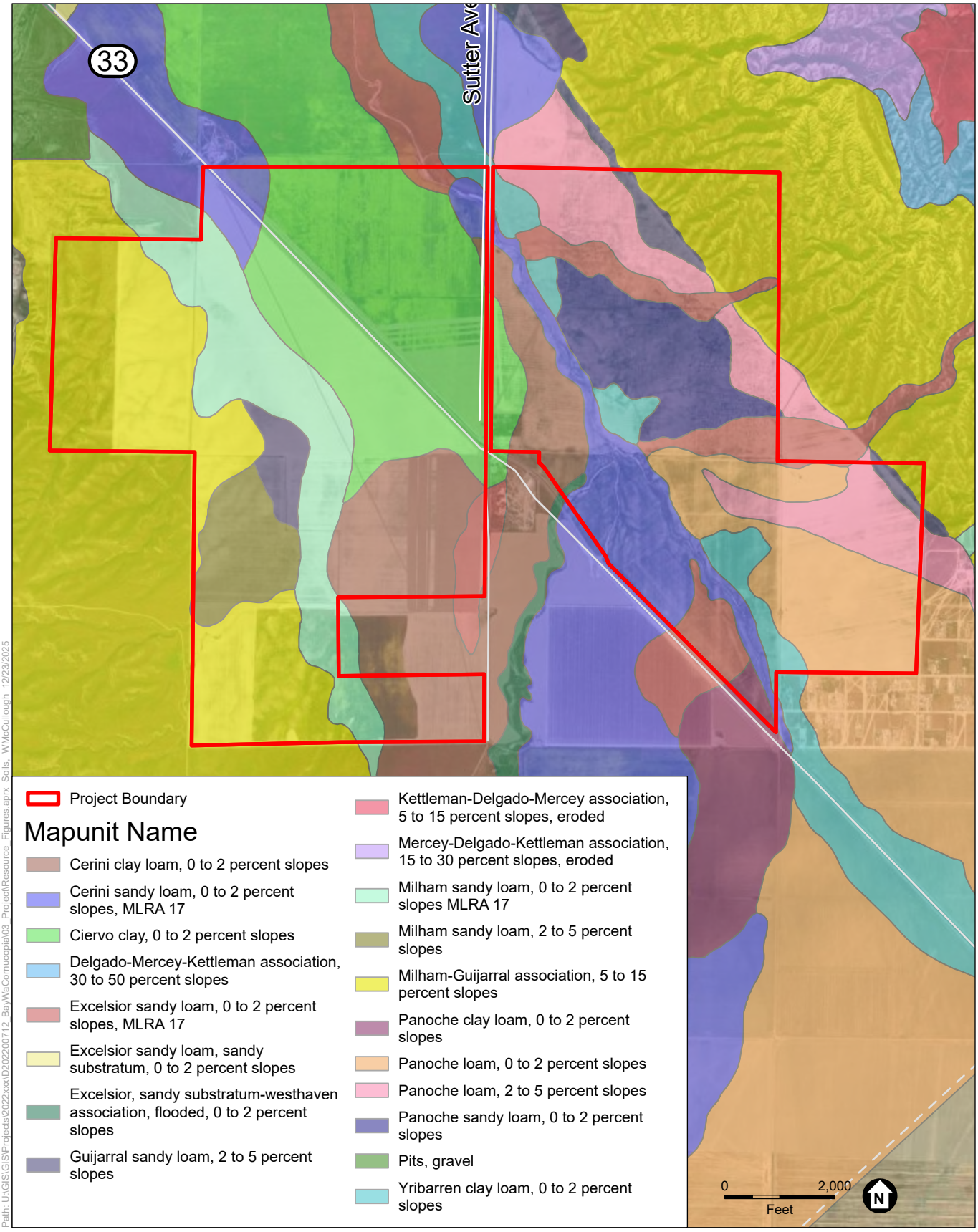
1. A wind erodibility group consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to Group 1 are the most susceptible to wind erosion, and those assigned to Group 8 are the least susceptible.
2. Stability concerns include soils that have properties prone to erosion, liquefaction, and differential settling.

Source: NRCS 2024a

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.[4] Expansive soils are typically very fine-grained and have a high to very high percentage of clay. The U.S. Natural Resources Conservation Service relies on linear extensibility measurements to determine the shrink-swell potential of soils. If the linear extensibility percent is more than 3 percent (COLE=0.03), shrinking and swelling may cause damage to buildings, roads, and other structures (NRCS 2024b). 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. As indicated in Table 3.8-1, there are soils present on-site that are considered potentially expansive.

[4] *Perched groundwater* is a local saturated zone above the water table that typically exists above an impervious layer (such as clay) of limited extent.



Source: ESA, 2024; NRCS, 2024

Cornucopia Hybrid Project

Figure 3.8-2
Soils in the Project Vicinity

ESA

Soil Erosion

Wind erosion is most prevalent in silty and fine sandy soils with sparse vegetation. Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion. Wind erodibility is rated on a scale of 1–8, with an 8 rating representing soils that are not susceptible to wind erosion due to coarse fragments or wetness and a rating of 1 representing soils that are made up of very fine sand, fine sand, sand, or coarse sand that are highly susceptible to wind erosion (NRCS 2024a). As indicated in Table 3.8-1, soils found at the Project site typically have a low to medium wind erodibility group rating, ranging from 3 to 6 (NRCS 2024a).

Collapsible Soils

Collapsible soils are defined by the U.S. Bureau of Reclamation as any unsaturated soil that goes through a radical rearrangement of particles and great decrease in volume upon wetting, additional loading, or both (Reclamation 1992). Collapse occurs as water enters the pores between the individual sand and silt grains and weakens the "bonding" of the clays or other binding agents. Overburden or applied weight causes soil particles to slide across one another (shear), filling voids and resulting in a reduction in the overall volume of the soil (NRCS 2024a). Soils susceptible to collapse typically contain a large amount of void space, have low bulk density, are geologically young, have a clay content of less than 30 percent, and have a large percentage of pore space (in the range of 40–60 percent). The Project site has not observed any subsidence or collapse.

Paleontological Resources

Paleontological resources are the fossilized remains or impressions of plants and animals, including vertebrates (animals with backbones such as mammals, birds, and fish), invertebrates (animals without backbones, such as starfish, clams, and coral), and microscopic plants and animals (microfossils). They are valuable, nonrenewable 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 the plants or animals became fossilized usually were quite different from the present environments in which the geologic formations now exist.

The paleontological records search and a supplemental paleontological resources memorandum for this Project have identified and summarized paleontological resources that may occur on and around the Project site (Appendix H; Appendix D). The analysis in the report is based on a review of the available paleontological literature and geologic maps, as well as a University of California Museum of Paleontology records search.

The majority of the site is mapped as low-sensitivity Holocene alluvium with the high-sensitivity Tulare Formation limited to the westernmost portion of the Project site (see geologic unit QPc on Figure 3.8-1). Topsoil is present in agricultural areas of the Central Valley, and in the San Joaquin Valley, topsoil depths typically range from 20 inches to 40 inches. Note that the long use of this area for agriculture has included many years of tilling that would have destroyed paleontological resources within the top few feet.

The University of California Museum of Paleontology database lists 16 vertebrate and two plant localities in the Tulare Formation. The vertebrate localities yielded 199 specimens. The one locality in Fresno County is on the other side of the Kettleman Hills, about 4 miles east of the Project site; it yielded two specimens of Orthodon. The database also lists two plant localities in the Tulare Formation: the one in Stanislaus County yielded 26 specimens from the Pleistocene Corcoran Clay, while the one in Kern County was collected for unidentified plant microfossils. No plant localities were identified in Fresno County. In general, Holocene deposits have a low potential to contain significant paleontological resources due to the relatively young age of those deposits (less than 11,700 years old) (SVP 2010; Appendix H); however, Holocene fossils have been discovered in Fresno County (O'Dell et al. 2017). The Holocene formation was not analyzed in the paleontological records search report (Appendix H).

While no records of paleontological resources were identified within the Project site, the presence of nearby Holocene and Tulare Formation fossil discoveries indicates that the potential exists to encounter paleontological resources

3.8.1.3 Regulatory Setting

Federal

Clean Water Act

The federal Clean Water Act (CWA) and subsequent amendments, under the enforcement authority of the U.S. Environmental Protection Agency, was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies. The CWA gave the U.S. Environmental Protection Agency the authority to implement pollution control programs such as setting wastewater standards for industry. In California, implementation and enforcement of the National Pollutant Discharge Elimination System (NPDES) program is conducted through the California State Water Resources Control Board and the nine regional water quality control boards (RWQCBs).

The CWA also sets water quality standards for surface waters and established the NPDES program to protect water quality through various sections of the CWA, including Sections 401–404 and 303(d), that are implemented and regulated by the State Water Resources Control Board and the nine RWQCBs. Section 402 of the CWA would apply to the Project because construction at the Project site would be required to control discharges of pollutants from point sources, as discussed below.

National Earthquake Hazards Reduction Act of 1977

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under the NEHRP: USGS, the National Science Foundation, the Federal Emergency Management Agency, and the National Institute of Standards and Technology. Since its inception, the NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (FEMA 2021) are as follows:

- Improve understanding of earthquake processes and impacts.

- Develop cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society-at-large.
- Improve the earthquake resilience of communities nationwide.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (United States Code Title 43, §§1701−1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, the Act was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." The Act requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Though this Act does not refer specifically to fossils, the law does protect scientific resources such as significant fossils, including vertebrate remains. The Act regulates the "use and development of public lands and resources through easements, licenses, and permits." The law requires public lands to be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy, and development of certain public lands, including the collection of significant fossils for scientific purposes (United States Code Title 43, §1701).

Code of Federal Regulations Title 43

Under Code of Federal Regulations (CFR) Title 43, §§8365.1–8365.5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a "reasonable amount" of common invertebrate or plant fossils for noncommercial purposes is permissible (43 CFR §§8365.1–8365.5).

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act is part of the Omnibus Public Land Management Act of 2009 (Public Law 111-011, Subtitle D). This law directs the Secretary of the Interior or Secretary of Agriculture to manage and protect paleontological resources on federal land and to develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under this law, establishes penalties for violations, and creates a program to increase public awareness about these resources. Paleontological resources collected under a permit must remain United States property, and must be preserved for the public in an approved repository and available for scientific research and public education. The Paleontological Resources Preservation Act also requires that the nature and location of paleontological resources on public lands remain confidential as a means of protecting the resources from theft and vandalism.

Section 6301 of the Paleontological Resources Preservation Act and the Departmental Proposed Rule at 43 CFR Part 49 define a *paleontological resource* as:

> *Any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth, except that the term does not include— (A) any materials associated with*

> *an archaeological resource… (B) any cultural item… (3) Resources determined in writing by the authorized officer to lack paleontological interest or not provide information about the history of life on earth, based on scientific and other management considerations.*

Consistent with the definition of a paleontological resource under the Paleontological Resources Preservation Act, those paleontological resources that lack scientific interest (e.g., resources that are ubiquitous or do not provide information about the history of life on Earth) are considered scientifically non-significant fossils.

State

California Building Code

The Project would be subject to the applicable sections of Title 24, Part 2 of the California Building Code (CBC), which is administered by the California Building Standards Commission. The CBC contains necessary California amendments, which are based on American Society of Civil Engineers/Structural Engineering Institute Standards. These standards provide requirements for general structural design and include means for determining earthquake loads, as well as other loads for inclusion into building codes. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a seismic design category for a project. Once a project is categorized according to a seismic design category, design specifications can be determined. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure—or any appurtenances connected or attached to such buildings or structures—throughout California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was enacted in 1972 to protect human-occupied structures from the hazard of surface faulting. In accordance with this law, the State Geologist has established regulatory zones called *earthquake fault zones* around the surface traces of active faults and has published maps showing these zones. Buildings for human occupancy cannot be constructed across surface traces of faults that are determined to be active. Because many active faults are complex and consist of more than one branch that may experience ground surface rupture, earthquake fault zones extend approximately 200–500 feet on either side of the mapped fault trace.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code §§2690−2699.6) directs the California Geological Survey to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of this program is to minimize the loss of life and property through the identification, evaluation, and mitigation of seismic hazards. The program has generated Seismic Hazard Zone Maps that identify Zones of Required Investigation. Counties and cities are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The Project is in an area that has not yet been mapped as part of the Seismic Hazards Mapping Act.

National Pollutant Discharge Elimination System Construction General Permit

Construction associated with projects that would disturb more than 1 acre of land surface affecting the quality of stormwater discharges into waters of the United States are subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order

2022-0057-DWQ, NPDES No. CAS000002), commonly referred to as the Construction General Permit. The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction 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.

The Construction General Permit requires construction sites to be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and on 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 has the potential to 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.
- Monitoring and reporting requirements.

The Construction General Permit requires the development and implementation of a storm water 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. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP must 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 CWA Section 303(d) list for sediment.

The SWPPP must be prepared before 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 any BMPs fail; and a sediment monitoring plan if the site discharges directly to a water body listed on the CWA Section 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 fences 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 and vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site after construction).

In the Project area, the Construction General Permit 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 the Construction General Permit. 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.

California Environmental Quality Act

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (California Public Resources Code Division I, §5020.1[b]). Appendix G of the CEQA Guidelines provides an Environmental Checklist of questions that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site?"

CEQA does not define "a unique paleontological resource or site." However, the Society of Vertebrate Paleontology (SVP) has provided guidance specifically designed to support state and federal environmental review. The SVP broadly defines *significant paleontological resources* as follows (SVP 2010:11):

> *Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).*

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well-represented lineages can be equally important for studying evolutionary pattern and process, and evolutionary rates. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered significant.

California Public Utilities Commission General Order 95

The Electric Safety and Reliability Branch of the California Public Utilities Commission has jurisdiction over the safety of overhead and underground electric and communications line construction of all investor-owned utilities, co-ops, and municipalities. California Public Utilities Commission General Order 95, *Rules for Overhead Line Construction*, provides general standards for the design, construction, and maintenance of overhead electrical supply and communication facilities under the jurisdiction of the commission. "Facilities" include power lines, service drop lines, conductors, towers, poles, and other structures.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County General Plan

The Fresno County General Plan is a comprehensive long-range general plan for the physical development of the county (Fresno County 2024). Goals and policies related to geology and soils are listed below.

Goal HS-D To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.

Policy HS-D.1: Geologic Investigations and Knowledge. The County shall continue to support scientific geologic investigations that refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe ground shaking, avalanche potential, and other hazardous geologic conditions in Fresno County.

Policy HS-D.2: Geologic Hazard Mitigation Planning. The County shall ensure that the General Plan and/or County Ordinance Code is revised, as necessary, to incorporate geologic hazard areas formally designated by the State Geologist (e.g., Earthquake Fault Zones and Seismic Hazard Zones). Development in such areas, including public infrastructure projects, shall not be allowed until compliance with the investigation and mitigation requirements established by the State Geologist can be demonstrated.

Policy HS-D.3: Soils and Geologic-Seismic Analysis. The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, ground shaking, lateral spreading, lurch cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

Policy HS-D.4: Soils and Geologic-seismic Structure Design. The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the California Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.

Policy HS-D.5: Alquist-Priolo Earthquake Fault Act. Pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Chapter 7.5), the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied.

Policy HS-D.6: Seismic Standards for Critical Facilities. The County shall ensure compliance with State seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and storage facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.

Policy HS-D.7: Soils Report. The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high "expansive" or "shrink-swell" properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

Policy HS-D.8: Minimize Soil Erosion. The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

Policy HS-D.9: Drainage Plans. The County shall require the preparation of drainage plans for development or public infrastructure projects in hillside areas to direct runoff and drainage away from unstable slopes.

Policy HS-D.10: Maximum Slope Requirements. The County shall not approve a County permit for new development, including public infrastructure projects where slopes are over thirty (30) percent unless it can be demonstrated by a California-registered civil engineer or engineering geologist that hazards to public safety will be reduced to acceptable levels.

Policy HS-D.11: Landslide Hazard Areas. In known or potential landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems, undercutting the bases of slopes, removal of vegetative cover, and steepening of slopes.

Policy HS-D.12: Avalanche Hazard Areas. The County shall not approve a County permit for new development, including public infrastructure projects, in known or potential avalanche hazard areas unless it can be demonstrated by a California-registered engineer or engineering geologist that the structures will be safe under anticipated snow loads and avalanche conditions.

Policy HS-D.13: Geologic Hazard Areas Designations Whenever zoning is employed to restrict the use of land subject to severe geologic hazards (e.g., landslides), the County shall designate parcels so restricted for open space uses.

Goal OS-J To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the county's valued assets that have contributed to past county events, trends, styles of architecture, and economy.

Policy OS-J.4: Cultural Resources Protection and Mitigation. The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect

important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.

Policy OS-J.12: Geologic Resource Preservation. In approving new development, the County shall ensure, to the maximum extent practicable, that the location, siting, and design of any project be subordinate to significant geologic resources.

Policy OS-J.16: Permanent Geologic Resource Protection. The County shall encourage State and Federal agencies to purchase significant geologic resources for permanent protection.

Fresno County Solar Guidelines

The Fresno County Solar Facility Guidelines 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 [.]

Fresno County Department of Public Works and Planning Septic Tank Permits

The Fresno County Department of Public Works and Planning has established various permits and requirements for the construction of a septic tank, including depth of excavation, drainage piping specifications, and distance from drinking water wells.

3.8.2 Significance Criteria

The Project would result in a significant impact related to geology, soils, and paleontological resources if it would do any of the following:

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 soil[5] creating substantial direct or indirect risks to life or property.

[5] The CBC no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

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.

3.8.3 Direct and Indirect Effects

3.8.3.1 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 proposed improvements.

Applicant-Proposed Measures

Erosion and Sediment Control and Pollution Prevention

The Project includes certain actions to reduce the potential significance of initially anticipated environmental impacts related to a variety of resource areas, including geology and soils. The full list of actions is provided in Section 2.9, *Applicant-Proposed Measures and Design Features,* in Chapter 2, *Project Description*. Of these, the following action described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention*, is relevant to the analysis below:

- Minimize soil disturbance where feasible (e.g., by limiting trenching and excavations no further than what is necessary to effectively build the Project).

3.8.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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 does not lie within any mapped earthquake fault zones according to the California Geological Survey. Although the area could be affected by earthquakes or seismic ground shaking, no current data are available indicating the presence of Holocene-active faults within the Project site. The nearest earthquake fault zones to the Project site are the Great Valley, Nunez, and San Andreas fault zones. The Project would include two structures that would be used for O&M control services as needed. Given that the Project would not include any habitable structures, and would only include structures that would be used on an temporary and as-needed basis, the Project would not expose people or structures to potential substantial adverse effects associated with rupture of a known earthquake fault. There would be no impact related to surface fault rupture during Project construction, operation and maintenance (O&M), 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 groundshaking.

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.

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.

Impact 3.8-1: The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic groundshaking, liquefaction, or landslides. (Less-than-Significant Impact)

Construction, Operation and Maintenance, and Decommissioning

The Project site may be subject to moderate to severe seismic ground shaking due to the proximity to the Great Valley, Nunez, and San Andreas fault zones. Should strong seismic ground shaking occur at the Project site, damage to the photovoltaic modules, the O&M buildings, the energy storage system (ESS), or other ancillary facilities could result in damage and/or injury to on-site staff.

The Project would be required to comply with the seismic design criteria of the CBC, which require that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. CBC regulations (see Section 3.8.1.3, *Regulatory Setting*) would require that the Project owner retain a licensed geotechnical engineer to design the Project components to withstand probable seismically induced ground shaking. All construction on-site 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 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, O&M, or decommissioning would be less than significant.

The risk of liquefaction and lateral spreading is low to moderate because fine-grained, cohesive soils are present at the Project site. However, consistent with the building code's seismic design standards, the licensed geotechnical engineer would be required to consider potential liquefaction and lateral spreading in the final design plans. Liquefaction hazards can generally be addressed through site preparation measures or foundation design measures such as removal and replacement of liquefiable soils, densification of these soils, or specific foundation design recommendations. Implementing these measures in accordance with building code requirements can effectively reduce the hazard to minimize any potential for substantive damage.

The Project site has nearly flat topography; however, Canoas Creek passes through the Project site, as shown on Figure 3.11-1in Section 3.11, *Hydrology and Water Quality*. Although there are no mapped landslides on or around the site, portions of the creek are mildly susceptible to landslides, as indicated by the USGS Landslide Hazard Program. Landslide risk would be addressed with adherence to CBC requirements and compliance with the seismic recommendations of a California-registered, professional geotechnical engineer. Furthermore, Project components would not be located in Canoas Creek and would therefore avoid any areas of increased landslide risk.

Compliance with CBC requirements, including implementation of recommendations provided in a geotechnical report and local agency enforcement, would reduce or avoid impacts related to ground failure. Project construction, O&M, and decommissioning would not directly or indirectly cause adverse effects related to ground failure, including liquefaction and landslides, and the impact would be less than significant.

Mitigation: None required.

Criterion b) Whether the Project would result in substantial soil erosion or loss of topsoil.

Impact 3.8-2: The Project would not result in substantial soil erosion or loss of topsoil. ***(Less-than-Significant Impact)***

As discussed in Section 3.8.1.2, the Project would be located in an area with soils that are moderately susceptible to erosion, which could result in substantial soil erosion or loss of topsoil.

Construction and Decommissioning

During construction, the Project would include ground-disturbing activities that could increase the risk of erosion or sediment transport, if not managed appropriately. Such activities could result in soil erosion during excavation, grading, trenching, and soil stockpiling. As described in Section 2.6, *Construction*, in Chapter 2, *Project Description*, minimal site grading would occur to prepare the Project site for construction of the solar facility and ESS. Construction of the substation would require trenching, excavation, grading, backfilling, compaction, and leveling. As presented in Table 2-2, ground disturbance associated with construction of the solar facility and ESS Project components would take place on approximately 461 acres of the approximately 2,446-acre site. Erosion control sediment basins would be placed and maintained during construction and decommissioning activities, as discussed below.

Construction of the ESS would require the preparation of foundations using concrete pads or piers, followed by excavation, grading, and concrete pouring. Topsoil would be preserved as much as possible, and temporary disturbance areas on the site would be revegetated with native or naturalized grasses after installation (Appendix B.2). When grading begins, topsoil would be removed and stockpiled on-site. Once grading is complete, the topsoil would be reapplied to the graded areas to assist with site vegetation and stabilization.

As described in Section 2.5.1.4, *Other Facilities and Infrastructure*, telecommunication lines would be trenched approximately 3–4 feet deep and 2–3 feet wide, as applicable, to support telecommunications activities at the O&M buildings. If required, the trenches would be filled with base materials above and

below the conductors and communication lines to ensure adequate thermal conductivity and electrical installation characteristics. The topsoil from trench excavation would be stockpiled adjacent to the trench for use as backfill and would ultimately form the uppermost layer of the trench. Excess material from the foundation and trench excavations would be used for site leveling. Where possible, trenching would be located beneath drays and roads to minimize disturbance. The pile depth foundation design would be designed by a structural engineer, using the results from the geotechnical report. The minimum depth would be 4 feet, but the maximum depth could be more than 15 feet if required by the soil conditions.

Because such activities would occur on more than 1 acre during construction, the Project would be required to comply with the Construction General Permit described in Section 3.8.1.3, *Regulatory Setting*, and discussed further in Section 3.11, *Hydrology and Water Quality*. This requirement was developed to ensure that stormwater is managed to protect water quality and includes erosion control measures for construction sites, as well as post-construction requirements. The Construction General Permit requires the preparation and implementation of a SWPPP that identifies BMPs to control stormwater from construction work sites. The BMPs may include physical barriers to prevent erosion and sedimentation; construction of sedimentation basins; limitations on work periods during storm events; use of infiltration swales; protection of stockpiled materials; and other measures identified by a qualified SWPPP preparer that would prevent erosion from occurring during construction.

Decommissioning activities (e.g., removal of all aboveground and belowground structures unless deemed necessary by the public utility company) would mirror the soil disturbance associated with construction. As described in Section 2.8, *Decommissioning and Site Reclamation,* in Chapter 2, *Project Description*, the Project site would be restored to a condition comparable to that before construction. A County-approved solar reclamation plan has been drafted (see Appendix B.2). In addition, the decommissioning activities would require compliance with the Construction General Permit with its required implementation of a SWPPP.

As described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention,* in Chapter 2, Applicant-proposed measures are proposed for inclusion as part of the Project to prevent erosion and limit the mobilization of sediment and other pollutants off-site through runoff during construction. These measures include minimization of soil disturbance where feasible, use of water-based dust suppression or appropriate soil stabilizers on Project roads during construction and decommissioning activities, stabilization of soil piles, dust suppression measures, and suspension of work during high winds. In addition, the Project would not include exterior wash-down areas and on-site repair or maintenance bays or fueling areas. Through compliance with these independently enforceable existing requirements, the potential impacts of the Project associated with soil erosion and loss of topsoil during construction would be less than significant.

Operation and Maintenance

O&M of the solar facility and ESS would require minimal earthwork. Intermittent additional support personnel may include between 6 and 22 workers to perform maintenance activities (such as panel washing) and occasional facility repairs, as needed. Non-routine (emergency) maintenance could require additional workers. The Project would also include sheep grazing throughout the Project site. The Applicant has contracted with a local vendor to provide sheep grazing services. Sheep grazing is proposed to enhance and improve soil health, ecology, biodiversity, and function within the solar facility site.

Approximately 20 percent of the ground cover would remain to preserve the topsoil and to reduce dust creation and the proliferation of invasive noxious weed species.

In addition, the Project would be required to comply with the post-construction runoff reduction standards of the Construction General Permit, which require the Project to replicate the pre-Project water balance (volume of rainfall that ends up as runoff) for the smallest storms up to the 85th percentile storm event. The Project would also implement BMPs to reduce pollutants in stormwater discharges that are reasonably foreseeable after all construction phases have been completed. Impacts would therefore be less than significant.

Impact Conclusion

Compliance with the Applicant-proposed measures, permit conditions, and regulatory requirements would reduce the risk of substantial soil erosion or loss of topsoil during Project construction, O&M, and decommissioning. Therefore, the Project's impacts would be **less than significant.**

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 3.8-3: 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 discussed previously, there would be a less-than-significant impact related to liquefaction, lateral spreading, landslide, or other seismic-related ground failure. The area is very gently sloping with no evidence of landslides, and the consolidated sediments underlying the Project site would be unlikely to destabilize during Project construction, O&M, or decommissioning. The Project site is in an area that has not experienced substantial land subsidence. Groundwater would be required as part of Project construction, O&M, and decommissioning activities; however, Pleasant Valley Water District (the local groundwater management agency) is required to address undesirable effects of groundwater pumping, including subsidence, as part of groundwater management in compliance with the Sustainable Groundwater Management Act of 2014. (See Section 3.11, *Hydrology and Water Quality*, for additional information about potential groundwater impacts.) Additionally, no dewatering activities are planned as part of the Project.

The CBC would require the completion of a geotechnical investigation for all Project components.

The Project would be designed to comply with applicable building codes to withstand the effects of settlement or collapsible soils. Areas of soft ground can be addressed by removal and/or replacement of soils as engineered compacted fill in accordance with building code requirements. With adherence to all applicable building code regulations, the Project would avoid potential impacts on proposed improvements resulting from unstable soils, and potential impacts would be less than significant.

Mitigation: None required.

Criterion e) Whether the Project would 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.

Impact 3.8-4: The Project would not 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. ***(Less-than-Significant Impact)***

Portable toilets would be used during construction. Sanitary facilities for Project operation would be provided through the septic system at the proposed O&M buildings. The septic tank would be connected to the O&M buildings and would be located in soils that could be considered expansive (Panoche loam soil complex).

A septic system permit would be required by the Fresno County Public Works and Planning Department, the regulatory agency that oversees the design, installation, and operation of on-site wastewater treatment systems. Adherence to requirements of the septic system permit would ensure that 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 geological feature.

Impact 3.8-5: The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (*Less than Significant with Mitigation Incorporated)*

The entire Project site and surrounding half-mile search area are on Holocene alluvium (Qa) and the Pleistocene to Pliocene Tulare Formation (QTl), which includes geologic units with higher paleontological potential, where unique paleontological resources or unique geologic features might be encountered on the Project site. The Project site is largely undeveloped, although the site has been used for dry-farmed (unirrigated) agricultural production of wheat and grazing fodder. Although deep tillage to support these activities could have occurred up to 24 inches below ground surface, tilling more generally occurs at depths between 12 and 16 inches. Because the surface up to 16 inches would have been disturbed regularly pursuant to on-site agricultural operations, the potential is low for surficial Qa deposits at the Project site to yield significant paleontological resources.

Project-related excavation to install telecommunication lines would be approximately 3–4 feet deep and 2–3 feet wide. Excavation would also be required to install the septic tank and any support for the solar panels. Soils may be disturbed during Project decommissioning. Maximum excavation on-site could be over 15 feet depending on soil conditions. Negligible surface disturbance is anticipated during the O&M phase of the Project. The Qa deposits would not contain unique paleontological resources.

As discussed in the Supplemental Paleontological Resources Memorandum prepared by Rincon Consultants, the high-sensitivity Tulare Formation is present on the westernmost portion of the Project site (see geologic unit QPc on Figure 3.8-1). Topsoil is present within agricultural areas of the Central Valley, and in the San Joaquin Valley topsoil depths typically range from 20 inches to 40 inches. Therefore, ground disturbance that extends beyond the topsoil layers in areas mapped as Tulare Formation may encounter sensitive paleontological resources. Ground-disturbing activity that may exceed existing topsoil depths in areas mapped as Tulare Formation would be limited to trenching. Site preparation, road grading, and clearing would not be expected to exceed the depth of topsoil.

Recommendations provided by the paleontological resources memo include active paleontological monitoring in portions of the site mapped as the Tulare Formation. Monitoring would be limited to ground-disturbing construction activities that would exceed the depth of topsoil (20–40 inches) and that would have the potential to affect previously undisturbed sediments of the Tulare Formation. Paleontological monitoring should be conducted by a paleontological monitor with experience in the collection and salvage of paleontological resources, overseen by a Qualified Paleontologist who meets the minimum standards of the SVP (2010). If a fossil is found, the paleontological monitor must salvage (excavate and recover) the fossil to protect it from damage/destruction. After the fossil(s) is (are) salvaged, construction activity may resume. Adherence to guidance from the Supplemental Paleontological Resources Memorandum would reduce the impacts on paleontological resources in the Tulare Formation to less than significant.

As discussed above, paleontological resources could be disturbed in the Tulare Formation during construction. In the event of an unanticipated fossil discovery during ground-disturbing activities in the areas of the Project site mapped as Tulare Formation, the severity of the impact would be reduced to a less-than-significant level by implementation of **Mitigation Measure 3.8-1: Unanticipated Fossil Discovery**. This measure requires the development of a paleontological worker education and awareness program, and requires that work halt in the vicinity of any potential find until a qualified paleontologist can make an assessment and provide further recommendations.

> **Mitigation Measure 3.8-1: Unanticipated Fossil Discovery**
> Before any ground-disturbing activities, the Project owner shall develop and implement a paleontological worker education and awareness program. 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 15 feet of the find shall stop immediately until a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) 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 are required, recommendations will be consistent with the standards of 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 (SVP 2010). 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; however, this would be dependent on landowner permission.

Significance after Mitigation: Mitigation Measure 3.8-1: Unanticipated Fossil Discovery requires the development and implementation of a worker environmental awareness program, which would act to educate all workers on the potential to encounter fossils during construction activities and proper procedures to follow in the event of a discovery. In the event of a significant discovery, a professional paleontologist would be retained to assess the find and advise on recovery, salvage, and treatment of the discovery. If the discovery is deemed a significant find, proper procedures would be in place to unearth the find and have it treated and housed in an accredited museum or university. Adherence to Mitigation Measure 3.8-1 would ensure that potential impacts on unique paleontological resources would be less than significant with implementation of the mitigation measure.

Pacific Gas and Electric Company Infrastructure

With respect to criterion a.i), the Pacific Gas and Electric Company (PG&E) infrastructure components would have no impact related to surface fault rupture, for the same reasons as described for the solar facility and ESS (no mapped earthquake fault zones and no habitable structures on-site). There would also be no impact under criterion e) because there would be no septic tank or alternative wastewater disposal system associated with the PG&E infrastructure components.

Under criteria a.ii) through a.iv), the PG&E infrastructure would have less-than-significant impacts related to the risk of loss, injury, or death involving seismic groundshaking, liquefaction, or landslides. There is a low to moderate risk of liquefaction, lateral spreading, and landslides at the site. All structures would comply with the seismic recommendations of a California-registered, professional geotechnical engineer in accordance with the CBC. Similarly, California Public Utilities Commission General Order 95 would require the completion of a geotechnical investigation for the PG&E infrastructure Project components. The geotechnical investigation would analyze geotechnical conditions, conduct soil laboratory testing as needed, and provide geotechnical recommendations to address any identified problematic conditions. With adherence to geotechnical recommendations and the building codes, there would be a less-than-significant impact under criterion c).

Construction of the PG&E infrastructure across the 2-acre footprint would require ground disturbance similar to that described for the other Project components (e.g., solar facility and ESS). As related to criterion b), and as described in Section 2.5.2.3, *Stormwater,* in Chapter 2, *Project Description,* temporary erosion sediment basins would be placed at the downstream end of the drainage area before water leaves the Project site and would be maintained during construction. As described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention,* Applicant-proposed measures are proposed for inclusion as part of the Project to reduce the potential for erosion and limit the mobilization of pollutants off-site through runoff during construction. The Construction General Permit obtained for the Project would cover the PG&E infrastructure with the SWPPP, including measures to limit erosion and off-site transport of sediment and other pollutants from construction activities through the use of BMPs.

O&M of the PG&E infrastructure would be the same as under existing conditions. The substation would connect to PG&E's switching station by a new generation-tie and would connect to PG&E's existing 230-kilovolt transmission line located directly adjacent to the switching station. Stormwater falling on the footprint of the switching station could run off and cause erosion.

As described in Section 2.5.2.3, *Stormwater,* to meet County requirements that no increase in off-site drainage occur, the Project site would include permanent on-site detention ponds that would retain stormwater runoff. Detention ponds would be located at the downstream end of the drainage area before water leaves the Project site. Given the proximity of the PG&E infrastructure to the solar facility and ESS, the permanent on-site detention basins would also collect and control stormwater flow, direct the flow to detention basins that would facilitate infiltration of stormwater into the water table, and slow and control the rate of runoff during storm events. Therefore, a less-than-significant impact would occur under criterion b).

Finally, the PG&E infrastructure would have the same potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature as the solar facility and ESS components. Implementation of Mitigation Measure 3.8-1 regarding unanticipated fossil discovery on the Project site as a whole would reduce the potential impacts of a discovery within the PG&E infrastructure component location to a less-than-significant level under criterion f).

3.8.4 Cumulative Analysis

As discussed above, the Project would not cause any impact with respect to the rupture of a known earthquake fault. Therefore, it would not cause or contribute to any cumulative impact related to landslides. For the remaining geology, soils, or paleontological resources considerations, this section analyzes the potential significance of the cumulative impacts of the Project's effect in combination with the impacts of one or more of the cumulative projects identified in Table 3.1-1, *Cumulative Projects List*, discussed in Section 3.1.3.1, *Cumulative Scenario*, and shown in Figure 3.1-1, *Cumulative Projects*.

For Project impacts to combine with the impacts of other projects, the collective incremental impacts must overlap both geographically and temporally. The geographic area affected by the Project, and by its potential to contribute to cumulative impacts related to geology, soils, and paleontological resources, encompasses and is limited to the Project site and its immediately adjacent area, because the Project would not cause or contribute to any potential significant impact beyond this range. The time frame during which the Project could contribute to cumulative impacts related to geology, soils, and paleontological resources would begin with on-site ground-disturbing construction activities and conclude with the cessation of decommissioning and site restoration. The Project could not cause or contribute to any cumulative impacts outside this time frame.

Impact 3.8-6: The Project would not cause or contribute to a significant cumulative effect related to strong seismic ground shaking, liquefaction, or landslides. (*Less-than-Significant Impact)*

The Project site may be subject to strong, seismically induced ground shaking. As discussed in Section 3.8.3, *Direct and Indirect Effects of the Project*, the Project would be designed and constructed in accordance with the most current building code requirements; accordingly, 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. All other projects occurring near the Project site would be required to comply with the same applicable provisions of these laws and regulations. Compliance with these requirements would reduce 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, less-than-significant impacts of the Project combined with impacts of other projects in the area would not combine to cause a significant cumulative impact related to seismic hazards.

Impact 3.8-7: The Project would not cause or contribute to a significant cumulative effect related to erosion or the loss of topsoil. (*Less-than-Significant Impact)*

If site drainage is not managed properly, then drainage from the Project site in combination with drainage from other project sites could cause soil erosion or loss of topsoil at the local or regional level. Like the Project, all other 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) to prevent significant erosion impacts. Potential significant impacts of the Project related to soil erosion and loss of topsoil would be prevented through 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. Cumulative projects would be required to implement similar stormwater control requirements. Therefore, based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the relevant geographic area would not cause or contribute to a significant cumulative impact related to erosion and loss of topsoil. The Project's contribution to any cumulative impact would not be cumulatively considerable.

Impact 3.8-8: The Project would not cause or contribute to a significant cumulative effect related to being 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 discussed previously, there would be a less-than-significant impact related to liquefaction, lateral spreading, landslide, or other seismic-related ground failure. The Project would be designed to comply with applicable building codes to withstand the effects of settlement or collapsible soils, and to reduce the risk that the Project would affect soil stability. Similar projects in the area would also be required to adhere to all applicable federal, state, and local regulations regarding soil and geologic stability. Furthermore, the Project would be demolished and land would be reclaimed and restored in accordance with federal, state, and local laws, as outlined in Appendix B.2, *Solar Reclamation Plan.* Cumulative projects would be required to comply with the same regulations.

Because the Project and cumulative projects would be constructed in accordance with all applicable building codes and the Applicant would reclaim and restore the land in accordance with applicable land use regulations in effect at the time of decommissioning, the Project's contribution to any cumulative impact related soil instability would not be considerable. This impact would be less than significant.

Impact 3.8-9: The Project would not cause or contribute to a significant cumulative effect on paleontological resources. (*Less than Significant with Mitigation Incorporated)*

The geographic scope of cumulative impacts on paleontological resources includes the Project site and adjacent areas where deposits with a high potential to contain paleontological resources could be disturbed. Should paleontological resources extend across areas of ground disturbance of the Project and cumulative projects, a cumulative loss of paleontological resources could result and, if so, would be a

significant impact. However, implementation of Mitigation Measure 3.8-1 at the Project level would effectively reduce the Project's incremental contribution to any cumulative impact by limiting the potential loss of such resources, if discovered during Project-related ground disturbance. Cumulative projects that are located on geologic units with the potential to encounter paleontological resources would also be required to implement a mitigation measure to protect such paleontological resources.

With compliance with existing regulations and mitigation measures, the Project's incremental contribution would not cause or contribute to a cumulatively considerable impact. Therefore, the Project's contribution to any cumulative effect would not be cumulatively considerable, and this impact would be less than significant with mitigation.

Mitigation: Implement Mitigation Measure 3.8-1.

Significance after Mitigation: Less than significant.

3.8.5 References

CGS (California Geological Survey). 2002. "California Geomorphic Provinces." Note 36. Revised December 2002. Available: https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf. Accessed September 6, 2024.

CGS (California Geological Survey). 2018. *Earthquake Fault Zones: A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California.* Special Publication 42. Revised 2018.

CGS (California Geological Survey). 2024a. Fault Activity Map of California. Search term: "Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA". Available: https://maps.conservation.ca.gov/cgs/fam/app/. Accessed September 6, 2024.

CGS (California Geological Survey). 2024b. Earthquake Zones of Required Investigation. Search term: "Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA" Available: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed September 6, 2024.

DWR (California Department of Water Resources). 2024. SGMA Data Viewer. Search term: Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA. Available: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub. Accessed September 10, 2024.

Field, E. H., G. P. Biasi, P. Bird, T. E. Dawson, K. R. Felzer, D. D. Jackson, K. M. Johnson, T. H. Jordan, C. Madden, A. J. Michael, K. R. Milner, M. T. Page, T. Parsons, P. M. Powers, B. E. Shaw, W. R. Thatcher, R. J. Weldon II, and Y. Zeng. 2015. "Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast (UCERF3)." *Bulletin of the Seismological Society of America* 105(2A):511–543. doi: 10.1785/0120140093.

Fresno County. 2024. *Fresno County General Plan Policy Document*. Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed November 15, 2024.

NRCS (U.S. Natural Resources Conservation Service). 2024a. Web Soil Survey. Search term: "Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA "Available: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed September 10, 2024.

NRCS (U.S. Natural Resources Conservation Service). 2024b. *National Soil Survey Handbook.* Part 618, "Soil Properties and Qualities," Section 618.41, "Linear Extensibility Percent."

O'Dell, R. E., D. M. Erwin, P. A. Holroyd, B. D. Rankin, and M. I. El-Faramawl. 2017. "Flora and Fauna of the Holocene Oil Canyon Paleosite from the Poorly Understood San Joaquin Desert Biozone." *Desert Symposium Field Guide and Proceedings* 2017:308–314. University of California Museum of Paleontology.

Reclamation (U.S. Bureau of Reclamation). 1992. *Characteristics and Problems of Collapsible Soil.* Report No. R-92-02. Denver Office, Research and Laboratory Services Division, Materials Engineering Branch, Denver, CO. February 1992. Available: https://www.usbr.gov/tsc/techreferences/rec/R9202.pdf. Accessed May 2024.

SVP (Society of Vertebrate Paleontology). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. Prepared by SVP Impact Mitigation Guidelines Revision Committee.

USGS (U.S. Geological Survey). 1996. *Database of Potential Sources for Earthquakes Larger than Magnitude 6 in Northern California.* Open-File Report 96-705. Working Group on Northern California Earthquake Potential.

USGS (U.S. Geological Survey). 2016. ShakeMap. Earthquake Planning Scenario. M 7.1 Scenario Earthquake—Great Valley 13 (Coalinga). Available: https://earthquake.usgs.gov/scenarios/eventpage/nclegacygreatvalley13coalingam7p1_se/shakemap/intensity. Last updated June 22, 2016. Accessed September 18, 2024.

USGS (U.S. Geological Survey). 2017. "Great Valley Thrust Fault System, Great Valley 02 Section (Class A) No. 28b." *In:* Quaternary Fault and Fold Database of the United States. Available: https://landslides.usgs.gov/static/lfs/nshm/qfaults/Reports/28b.pdf. Last reviewed May 8, 2017. Accessed September 6, 2024.

USGS (U.S. Geological Survey). 2024a. U.S. Landslide Inventory and Susceptibility. Search term: "Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA" Available: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=ae120962f459434b8c904b456c82669d. Accessed September 10, 2024.

USGS (U.S. Geological Survey). 2024b. "Moment magnitude, Richter scale - what are the different magnitude scales, and why are there so many?" Undated webpage. Available: https://www.usgs.gov/faqs/moment-magnitude-richter-scale-what-are-different-magnitude-scales-and-why-are-there-so-many. Accessed November 27, 2024.

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3.9 Greenhouse Gas Emissions

This section identifies and evaluates issues related to greenhouse gas (GHG) emissions. 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 GHG emissions (**Appendix A**, *Scoping Report*).

This analysis is based on the *Air Quality and Greenhouse Gas Emissions Technical Report* (AQ and GHG Technical Report) prepared for the Project (**Appendix E.1**). The preparers of this Draft EIR independently reviewed the AQ and GHG Technical Report, 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.

3.9.1 Setting

3.9.1.1 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, 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 the purposes of this analysis of potential GHG emissions-related impacts are the San Joaquin Valley Air Basin and the state.

The San Joaquin Valley 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.

3.9.1.2 Environmental Setting

Background

Gases that trap heat in the atmosphere are known as 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, sulfur hexafluoride (SF_6), perfluorocarbons (i.e., PFCs), and hydrofluorocarbons (i.e., 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 worldwide, is a much more potent GHG with 22,800 times the global warming potential as CO_2, which has a global warming potential of 1. In emission inventories, GHG emissions are typically reported as metric tons of CO_2 equivalent (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.

Effects of Climate Change

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 2023).

Emissions Inventories

In 2022, United States GHG emissions were about 6,343 million MT CO_2e. GHG emissions have decreased by 3 percent from 1990 to 2019 and down from a high of 15.2 percent above 1990 levels in 2007. Emissions increased from 2021 to 2022 by 0.2 percent. The decrease 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 2021 and 2022, the increase in total GHG emissions were largely driven by an increase in fossil fuel combustion across most end-use sectors due in part to increased energy use from the continued rebound of economic activity after the height of the COVID-19 pandemic. In 2022, CO_2 emissions from fossil fuel combustion increased by 1.0 percent relative to 2021 and were 1.1 percent below emissions in 1990. CO_2 accounted

[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.

for the largest percentage of GHGs (80 percent), followed by CH_4 (11 percent), nitrous oxide (6 percent), and fluorinated gases (3 percent). GHGs are emitted by all sectors of the economy, including transportation (28.4 percent), electricity generation (24.9 percent), industrial (22.9 percent), residential and commercial (13.5 percent), and agriculture (10 percent) (USEPA 2024). Forests and other lands contributed to an offset of 13.5 percent of GHG emissions in 2019 (USEPA 2024.

In 2022, California produced approximately 371.1 million MT CO_2e, which was 2.4 percent lower than 2021 emissions. Combustion of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2022, accounting for 37.7 percent of total GHG emissions in the state. This sector was followed by the industrial sector (19.6 percent), the electric power sector (including both in-state and out-of-state sources) (16.1 percent), the commercial and residential sector (10.6 percent), and the agriculture and forestry sector (8 percent). High global warming potential emissions from refrigerants and other sources made up 5.7 percent of the emissions while the waste sector resulted in 2.2 percent of the emissions (CARB 2024).

3.9.1.3 Regulatory Setting

Federal

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the USEPA has the authority to regulate motor vehicle GHG emissions under the federal Clean Air Act. The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agenc*y (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology. The Project would involve the use of off-road and heavy-duty equipment that would be considered under this regulation.

Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026

The USEPA finalized the federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026 in February 2022. These standards will leverage current and future technologies to result in the avoidance of more than 3 billion tons of GHGs through 2050. Vehicle trips associated with the Project would include passenger vehicles subject to the USEPA GHG emission standards.

Bipartisan Infrastructure Law

In 2021, President Biden signed the Bipartisan Infrastructure Law that allocates substantial funding to modernize transportation, enhance broadband access, improve water infrastructure, and support the transition to clean energy. Key provisions include investments in electric vehicle infrastructure, grid modernization, and renewable energy projects, all aimed at reducing emissions and enhancing climate resilience. The law emphasizes equitable access to these improvements, ensuring that underserved and rural communities benefit. Additionally, the Bipartisan Infrastructure Law enforces labor standards, mandates the use of American-made materials, and requires transparency and accountability in the allocation and use of funds. These measures collectively support the development of sustainable and resilient infrastructure, aligning with the goals of clean energy initiatives.

State

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

California Advanced Clean Cars Program

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, USEPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the USEPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the Low Emission Vehicle, Zero Emissions Vehicles, and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011). This regulation has the potential to impact the fuel efficiency of passenger vehicles associated with the Project's construction and operational vehicle trips.

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

The California Global Warming Solutions Act of 2006 (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT of CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

CARB approved the 2013 Scoping Plan update in May 2014. The update defined CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provided a framework for achieving the 2030 target. The 2017 Scoping Plan relied on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100. The 2017 Scoping Plan also put an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan did not provide project-level thresholds for land use development. Instead, it recommended that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of 6 MT of CO_2e by 2030 and 2 MT of CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

CARB published the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) in November 2022, as the third update to the initial plan that was adopted in 2008. The 2022 Scoping Plan Update identifies ways to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan (CARB 2022).

The 2022 Scoping Plan Update reflects existing and recent direction in the Governor's Executive Orders and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the Scoping Plan. Among these include Executive Order B-55-18 and AB 1279 (the California Climate Crisis Act), which identify the carbon neutrality and GHG reduction targets for 2045 incorporated into the Scoping Plan. This report uses the 2022 Scoping Plan to address criterion b) of the significance analysis.

CARB's 2022 Scoping Plan includes the following Electricity Goals:

- Keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030 and 85 percent below 1990 emissions by 2045.
- Reduce fossil fuel use.
- Reduce energy demand.
- Increase grid resiliency.

These goals would be accomplished through the Scoping Plan's ongoing and proposed measures, including:

- Per SB 350, double statewide energy efficiency savings in electricity and fossil gas end uses by 2030, through a combination of energy efficiency and fuel substitution actions.
- Per SB 350, connect long-term planning for electricity needs with the state's climate targets, adopting a 38 million MT GHG target for the electricity sector in 2030, which drops to 35 million MT in 2032.
- Per SB 100 and SB 1020, achieve 60 percent, 90 percent, 95 percent, and 100 percent renewable and zero-carbon retail sales by 2030, 2035, 2040, and 2045 respectively.
- Prioritize public investments in zero-carbon energy projects to first benefit the most overly burdened communities affected by pollution, climate impacts, and poverty.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the Metropolitan Planning Organizations' Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. Fresno Council of Governments (Fresno COG) was assigned targets of a 6 percent reduction in GHGs from transportation sources by 2020 and a 13 percent reduction in GHGs from transportation sources by 2035 (CARB 2023). These emission reduction assignments have influenced the Fresno COG's RTC and the Fresno County General Plan (General Plan), which are used to address criterion b) in the Project's significance analysis.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. As a solar energy installation, the Project would have the potential to support the state's required increase in retail sales of renewable energy.

Executive Order B-55-18

On September 10, 2018, former Governor Brown issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 32, SB 375, and SB 100. The Project would have the potential to help the state achieve its carbon emission reduction goals by providing a source of renewable energy to the region.

California Code of Regulations, Title 17, Section 95350 et seq.

In 2010, CARB adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (California Code of Regulations Title 17, §95350 et seq.). The purpose of this regulation is to achieve GHG emission reductions by reducing SF_6 emissions from gas-insulated switchgear. Owners of such switchgear must not exceed maximum allowable annual emissions rates, reduced each year until 2020, after which annual emissions must not exceed 1 percent. Owners must regularly inventory gas insulated switchgear equipment, measure quantities of sulfur hexafluoride (SF_6), and maintain records of these for at least three 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.

In December 2021, CARB adopted amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear, to update the phase out of SF_6 in gas-insulated switchgear. The new phase out schedule begins in January 2025 with all switchgear needing to be SF_6 free by January 2033. Under this resolution, CARB has developed a timeline for phasing out SF_6 equipment in California and created incentives to encourage owners to replace SF_6 equipment. The California Office of Administrative Law approved this rulemaking in December 2021 and the Resolution went into effect January 1, 2022.

California Advanced Clean Trucks Program

In March 2021, CARB approved the Advanced Clean Trucks regulation, which requires manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. In addition, the regulation requires company and fleet reporting for large employers and fleet owners with 50 or more trucks. By 2045, all new trucks sold in California must be zero-emission. Implementation of this regulation could potentially reduce consumption of nonrenewable transportation fuels as construction-related trucks transition to alternative fuel sources.

California Advanced Clean Fleets Regulation

In April 2023, CARB approved the Advanced Clean Fleets (ACF) regulation. The ACF regulation is part of California's strategy to accelerate the adoption of medium- and heavy-duty zero-emission vehicles (ZEV). It complements the Advanced Clean Trucks ACT regulation and aims to achieve public health, air quality, and climate goals. The ACF regulation applies to fleets performing drayage operations, those owned by state, local, and federal government agencies, and high priority fleets. The ACF regulation includes components such as a manufacturer sales mandate, drayage fleet registrations, requirements for drayage fleets to transition to ZEVs, and mandates for high priority and government fleets to purchase increasing percentages of ZEVs over time. The regulation provides flexibility and exemptions for cases where zero-emission trucks are not yet available. The ACF regulation is expected to significantly increase the number of ZEVs on California roads, leading to emissions reductions and health benefits. The Advanced Clean Trucks and ACF regulations together are expected to result in about 510,000, 1,350,000, and 1,690,000 ZEVs in California in 2035, 2045, and 2050, respectively. Medium- and heavy-duty vehicles associated with the Project could potentially be subject to the ACF requirements, especially in the decommissioning phase.

Executive Order B-48-18 (Zero-Emission Vehicles)

On January 26, 2018, Governor Brown signed Executive Order B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the EV charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan, along with the 2018 ZEV Action Plan Priorities Update, which includes and extends the 2016 ZEV Action Plan (Governor's Interagency Working Group on Zero Emission Vehicles 2016, 2018), to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Passenger vehicles associated with the Project would have the potential to be subject to this regulation.

Executive Order N-79-20 (Zero Emissions Vehicles Sales)

Governor Gavin Newsom signed Executive Order N-79-20 in September 2020, which sets a statewide goal that 100 percent of all new passenger car and truck sales in the state will be zero-emissions by 2035. It also sets a goal that 100 percent of statewide new sales of medium- and heavy-duty vehicles will be zero emissions by 2045, where feasible, and for all new sales of drayage trucks to be zero emissions by 2035. Additionally, the Executive Order targets 100 percent of new off-road vehicle sales in the state to be zero emission by 2035. CARB is responsible for implementing the new vehicle sales regulation. Medium- and heavy-duty vehicles as well as off-road equipment used in the decommissioning phase of the Project would be required to comply with the Executive Order.

Senate Bill 1020

SB 1020 signed into law on September 16, 2022, requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035, 95 percent by 2040, and 100 percent by 2045. All State agency facilities must be served by 100 percent renewable and zero-carbon resources by 2030. SB 1020 also requires the California Public Utilities Commission, California Energy Commission, and CARB to issue a joint progress report outlining the reliability of the electrical grid with a focus on summer reliability and challenges and gaps. Additionally, SB 1020 requires the California Public Utilities Commission to define energy affordability and use energy affordability metrics to develop protections, incentives, discounts, or new programs for residential customers facing hardships due to energy or gas bills.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno Council of Governments 2022 Regional Transportation Plan

Fresno COG's 2022 RTP/SCS outlines a regional transportation network that is environmentally sensitive and reduces GHG emissions through the year 2046 (Fresno COG 2022). New transportation facilities must avoid or fully mitigate all significant impacts on environmentally sensitive areas and natural resources such as minimizing loss of farmland. Increased transportation and facility design is encouraged, along with infill development near existing public transportation, which is intended to reduce vehicle miles traveled and the associated GHG emissions from those mobile sources. The RTP/SCS is used as part of the significance thresholds for the evaluation of the Project to satisfy criterion b).

San Joaquin Valley Air Pollution Control District

In August 2008, the SJVAPCD's Governing Board adopted the Climate Change Action Plan. The Climate Change Action Plan directed the SJVAPCD Air Pollution Control Officer to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change.

In 2009, the SJVAPCD adopted the Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA and the District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA (SJVAPCD 2009a, 2009b).

Use of BPS 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 significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions from business-as-usual is required to determine that a project would have a less-than-cumulatively-significant impact and be consistent with AB 32 2020 targets. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change (SJVAPCD 2009c). As SJVAPCD's adopted BPS are designed to help the district meet the 2020 emissions targets, compliance with these BPS are not applicable to determining significance for projects developed subsequent to 2020, such as the Project.

California Air Pollution Control Officers Association 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). This analysis uses the CAPCOA recommended interim GHG threshold as a significance threshold to evaluate the Project's impacts.

Fresno Council of Governments

SB 375 requires Metropolitan Planning Organizations to prepare a Sustainable Communities Strategy in their Regional Transportation Plan. As discussed above, the Fresno COG developed the 2022 RTP/SCS as the region's strategy to fulfill the requirements of SB 375, along with the Bipartisan Infrastructure Law Moving Ahead for Progress in the 21st Century Act (i.e., MAP-21), the Fixing America's Surface Transportation Act, and the Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. The 2022 RTP/SCS establishes a development pattern for the region that, when integrated with the transportation network and other policies and measures, would reduce GHG emissions from transportation. Specifically, the 2022 RTP/SCS 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 providing fair access to all residents affected by socioeconomic, geographic, and commercial limitations. The 2022 RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with it but provides incentives for consistency for governments and developers. The Project is analyzed against the 2022 RTP/SCS as part of this impact analysis.

Fresno County 2024 General Plan

The General Plan does not contain any goals and policies applicable to GHG emissions and climate change. The General Plan does include energy efficiency goals and policies applicable to new and existing housing, which would not apply to the Project. The General Plan also requires the County to develop a countywide Climate Action Plan within 2 years of adoption of the General Plan, with the objective of meeting a GHG emissions reduction trajectory consistent with state law (Fresno County 2024).

3.9.2 Significance Criteria

The significance criteria used to evaluate the Project impacts related to GHG emissions are based on the recommendations provided in Appendix G of the CEQA Guidelines (California Code of Regulations Title 14, §15000 et seq.). The Project would result in a significant impact related to GHG emissions if it would do any of the following:

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.

3.9.3 Direct and Indirect Effects

3.9.3.1 Methodology

Neither CEQA Guidelines § 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

[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).

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 (California Code of Regulations Title 14, §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 traveled, 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 per year to determine whether the Project's GHG emissions would be significant.

CAPCOA recommends the interim 900 MT CO_2e per year 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 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.

GHG emissions for project construction and decommissioning were calculated using the California Emissions Estimator Model (CalEEMod) version 2022.1.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (CAPCOA 2022). The input data for construction, decommission, and operation emission estimates for the Project are discussed below and provided in Appendix E.1. CalEEMod output files for the Project are included in Appendix E.1. The estimated total and net total emissions were then compared to the CAPCOA 900 MT CO_2e per year threshold.

Construction and Decommissioning Emissions

For this Project, the major source of GHG emissions 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. Total construction and decommissioning emissions from the Project were annualized over its expected 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 nitrous oxide were multiplied by their respective global warming potentials of 1, 30, and 298, respectively, and summed together to estimate CO_2e emissions.

At the end of the useful life of the Project (anticipated as 35 years), the Project would be decommissioned. Decommissioning and site restoration are anticipated to begin around 2061 and would consist of the removal of all above and below-ground structures and the restoration of topsoil, where applicable. CalEEMod does not include emission factors for years beyond 2050; therefore, for modeling purposes it was assumed that decommissioning would occur over 12 months in 2050. Due to the increasing efficiency of vehicles, it is anticipated that the actual decommissioning activities would result in less emissions than are projected in this analysis.

Operational Emissions

In CalEEMod, operational sources of criteria pollutant and GHG emissions include area, energy, and mobile sources. The first full year of operation was assumed to be 2030. The energy storage system facility was modeled as 95,000 square feet of refrigerated warehouses to account for the energy and refrigerant requirements for maintaining a stable temperature for optimum battery effectiveness, although this energy consumption is anticipated to be offset by the power generated at the site.

The Project would not involve the consumption of natural gas. The solar portion of the Project would not involve consumption of electricity from the grid during operation. On-site electrical needs from the solar portion of the Project would be offset by the Project and no connection to the grid for operational use is necessary. As a conservative estimate of electrical emissions, the energy storage system facility is anticipated to be charged from the grid. The 300-megawatt system would be charged once per day during off-peak hours. The system is estimated to draw 438,000 megawatt hours per year.[3]

During operations and maintenance, one of the sources of GHG emissions would come from sheep deployed on-site for vegetation management. CH_4 is produced as part of normal digestive processes in animals, particularly ruminant animals such as sheep. The amount of enteric CH_4 emitted by the sheep deployed to the operational Project site was estimated using an average of 19.7 grams of CH_4 per sheep per day (Belanche et al. 2023). Vegetation management during Project operation would require deployment of approximately 2,000 sheep to the site. Although grazing seasons would vary based on weather conditions and precipitation, it is assumed that sheep would be deployed seasonally for approximately 6 months from February through June of each operational year.

[3] The 300-megawatt system is anticipated to be charged one time per day. For calculating kilowatt hours, an average of 1,200 megawatt hours is assumed per day. Therefore, 1,200 megawatt hours * 365 days/yr = 438,000 megawatt hours/year * 1,000 = 438,000,000 kilowatt hours/year

Water use for project construction dust suppression and water use in project operations will generate GHG emissions through water trucks and water conveyance. Project operation is estimated to require approximately 30.97 acre-feet (10,091,604 gallons) per year (Appendix J).

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. The Project would have six circuit breakers that contain SF_6. However, new circuit breaker designs have been developed over the past several years to minimize the potential for leakage, compared to that of past designs (CARB 2020). In addition, the equipment would comply with CARB's Reducing SF_6 Emissions from Gas Insulated Switchgear regulations. CO_2e emissions resulting from SF_6 gas leakage at the Project site were estimated for the six high-voltage circuit breakers with a total combined capacity of 124 pounds of SF_6, assuming a maximum leak rate of 0.5 percent per year.

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 the Project's consistency with the GHG reduction measures detailed in CARB's *2022 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 plan to reduce GHG emissions and a CEQA-compliant analysis was completed for the GHG reduction plan (SJVAPCD 2009b, 2015). The applicable qualified plans are Fresno COG's 2022 RTP/SCS and the 2022 Scoping Plan.

3.9.3.2 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 3.9-1: The Project would generate GHG emissions, directly and indirectly, that could have a significant impact on the environment. (Less-than-Significant Impact)

Construction and 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 October 2026, and last for a period of 39 months. Emissions generated during construction would be short-term in nature, lasting only for the duration of the construction period. **Table 3.9-1** presents total and annual (amortized over 35 years) construction and decommissioning emissions from the Project. Additional details on calculations and CalEEMod output files can be found in the AQ and GHG Technical Report included as Appendix E.1.

TABLE 3.9-1
ESTIMATED ANNUAL CONSTRUCTION GREENHOUSE GAS EMISSIONS

Year	MT CO_2e
Total Construction[1]	7,016
Amortized (35 years) Construction	200

Notes: MT CO_2e = metric tons of carbon dioxide equivalents; CalEEMod = California Emissions Estimator Model

1. To quantify emissions from water supplied to the site for dust suppression, construction water consumption was input in CalEEMod as an operational use, then added to the total reported construction emissions.

Source: Data compiled by Environmental Science Associates in 2025 (see Appendix E.1, *Air Quality and Greenhouse Gas Emissions Technical Report*).

As shown in Table 3.9-1, the Project would generate construction emissions of 7,016 MT CO_2e over the 36-month construction and decommissioning periods. When amortized over the 35-year Project lifetime, annual emissions would be 200 MT CO_2e per year for construction.

Operation and Maintenance Emissions

The Project's annual emissions associated with O&M activities are shown in **Table 3.9-2**. O&M of the Project would generate GHG emissions from energy use (electricity consumed by the Project, as required when the Project is not powered by on-site energy generation, as well as for off-peak charging of the battery energy storage system, as necessary, to maintain alternating current design); sheep deployed to the Project site for grazing; motor vehicle trips to and from the Project site; refrigerants used in cooling off the proposed battery storage facility; SF_6 leakage from the estimated six circuit breakers; and the generation of electricity associated with supply, treatment, and distribution of water used by the Project and transport and treatment of wastewater generated; and refrigerant.

TABLE 3.9-2
ESTIMATED ANNUAL OPERATIONAL GREENHOUSE GAS EMISSIONS

Emission Source	MT CO_2e
Area	1
Energy[a]	9,628
Enteric CH_4 (Sheep Grazing)	216
Mobile	60
Refrigerant	221
SF_6	7
Water	17
Total Operational	**10,150**

Notes: CH_4 = methane; CO_2e = carbon dioxide equivalent; ESS = energy storage system; MT = metric tons; SF_6 = sulphur hexafluoride

a. As a conservative estimate of electrical emissions, the ESS facility is anticipated to be charged from the grid using an average annual grid emission factor for 2030 through 2060 for emissions of 9,511 MT/yr CO2e with remainder from on-site demand for lighting.

Source: Data compiled by Environmental Science Associates in 2025 (see Appendix E.1, *Air Quality and Greenhouse Gas Emissions Technical Report*).

The Project must comply with CARB's *Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear* (California Code of Regulations Title 17, §95350 et seq.), which requires that annual emissions of SF_6 not exceed 1.0 percent after 2020. Fugitive SF_6 emissions from the six circuit breakers were estimated assuming a maximum annual leak rate of 0.5 based on the manufacturer's guaranteed specifications (USEPA 2002).

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 construction and 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 2.8, *Decommissioning and Site Reclamation*. On-site sources of GHG emissions include off-road equipment used for deconstruction and decommissioning activities. Off-site sources include on-road vehicles such as haul trucks, vendor trucks, and worker vehicles. Because decommissioning would occur a minimum of 35 years from the beginning of operations, the exact nature of the decommissioning activities and the equipment used is unknown. CalEEMod does not include emission factors for years beyond 2050; therefore, for modeling purposes it was assumed that decommissioning would occur over 12 months in 2050. Due to the increasing efficiency of vehicles, it is anticipated that the actual deconstruction activities would result in less emissions than are projected in this analysis. **Table 3.9-3** presents both total decommissioning emissions for the Project in 2061 and amortized annual emissions from on-site and off-site emission sources (as described in Appendix E.1).

TABLE 3.9-3
ESTIMATED ANNUAL CONSTRUCTION AND DECOMMISSIONING GREENHOUSE GAS EMISSIONS

Year	Project Emissions MT CO_2e
Total Decommissioning	1,678
Amortized (35 years) Decommissioning	48

Notes: MT CO_2e metric tons of carbon dioxide equivalents

Source: Data compiled by Environmental Science Associates in 2024 (see Appendix E.1, *Air Quality and Greenhouse Gas Emissions Technical Report*).

The 1,678 MTCO_2e total estimated Project-generated decommissioning emissions amortized over 35 years would be approximately 48 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 300 megawatts of alternating current (i.e.,

MW_{AC}), the Project is anticipated to generate approximately 438,000,000 kilowatt hours or 438,000 megawatt hours per year (Appendix E.1). These factors reflect the available daylight hours, conversion of direct current (i.e., DC) to alternating current (i.e., AC), and various system losses using the National Renewable Energy Laboratory's PVWatts online solar calculator.

The Project would result in a potential reduction of 90,272 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 Project would replace existing fossil fuel-generated energy in light of SB 100, which requires all electric utility companies, like Pacific Gas and Electric Company (PG&E), to make progress toward 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. California's electricity generation mix consists of approximately 2 percent coal and 36 percent natural gas-powered plants (CEC 2022). The average annual emission rates for coal is 6050 pounds of CO_2e per ton of coal (USEPA 1998), and the emission rate for natural gas is 110 pounds of CO_2e per Metric Million British Thermal Unit (i.e., MMBtu) (USEPA 2000).

Summary

Table 3.9-4 shows a summary of all Project-generated emissions and offsets. As shown in Table 3.9-4, after accounting for the Project's annualized construction and decommissioning emissions, operational emissions, and emissions offset from existing fossil fuel power plants, the Project would result in a net reduction of 79,874 MT CO_2e per year and a net benefit to the environment with respect to GHG emissions. 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 3.9-4
SUMMARY OF TOTAL PROJECT EMISSIONS

Source	Annual Project Emissions (MT CO_2e per year)
Amortized Construction Emissions over 35 Years	200
Annual Operational Emissions	10,150
Amortized Decommissioning Emissions over 35 Years	48
Total Annual Project Emissions	10,398
Emissions Offset from Existing Fossil-Fuel Power Plants	-90,272
Net Total Project Emissions	**-79,874**
Significance Threshold	900
Significant Impact?	No

Notes: MT CO_2e = metric tons carbon dioxide equivalent

Source: Data compiled by Environmental Science Associates in 2024 (see Appendix E.1, *Air Quality and Greenhouse Gas Emissions Technical Report*).

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 3.9-2: Construction, operation, and decommissioning of the Project would be consistent with applicable plans, policies, and 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, O&M, and decommissioning of a solar and energy storage facility that would serve as a new renewable source of energy in Fresno County. As discussed below, the Project would be consistent with the 2022 CARB Scoping Plan and would not impede the GHG reductions from cars and light-duty vehicles required by Fresno COG's 2022 RTP/SCS.

Scoping Plan

In keeping with the renewable energy target under the 2022 Scoping Plan and as required by SB 350, the Project would provide a source of renewable energy to help the State achieve 60 percent renewable retail sales by 2030. Renewable energy, in turn, potentially offsets GHG emissions generated by fossil-fuel power plants.

As discussed above under Impact 3.9-1, 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 Renewables Portfolio Standard 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 emissions from O&M, 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 2022 Scoping Plan.

2022 Fresno Council of Governments Regional Transportation Plan/Sustainable Communities Strategy

The Fresno COG'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 2022. 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 Fresno COG 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 Fresno COG is 13 percent from 2005 levels by 2035. In addition, Fresno COG has adopted a 2046 target of a 12 percent reduction from 2010 levels. The GHG emissions Fresno COG 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 3.12, Land Use and Planning, the Project is consistent with Fresno County's General Plan. The 2022 RTP/SCS notes that its land use assumptions include the loss of just under 2,000 acres of farmland of any type and 48.9 acres of important 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 Unique Farmland or Farmland of Statewide Importance as stated in Section 3.3, *Agriculture and Forestry Resources*. The Project would be located on approximately 77 acres of Prime Farmland; however, due to the provision of active sheep grazing annually, and avoidance of adverse effects of the environmental characteristics of the site that qualify it for mapping as Prime Farmland, the Project would have a less-than-significant impact related to the conversion of Prime Farmland. Therefore, the Project would not conflict with the Fresno COG 2022 RTP/SCS.

The Project would not conflict with an applicable plan regulating GHG emissions and would have an associated less-than-significant impact.

Pacific Gas and Electric Company 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 Gates Substation through a 200-foot-long gen-tie line. Construction and operation of the interconnection infrastructure would add GHG emissions from construction equipment, and construction vehicle trips. For the Project, no new transmission poles would be constructed within the construction timeframe. 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 O&M and decommissioning impacts above. Therefore, the GHG impacts discussed under Impacts 3.9-1 and 3.9-2 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 under criteria a and b.

3.9.4 Cumulative Analysis

Impact 3.9-3: The Project would not cause or contribute to GHG emissions that would have a significant impact on the environment or be inconsistent with applicable GHG emission reduction plans, policies, or regulations.

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 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.

Mitigation: None required.

3.9.5 References

Belanche, et al. 2023. Prediction of Enteric Methane Emissions by Sheep Using an Intercontinental Database. January 2023. Journal of Cleaner Production, vol. 184. Available: https://www.sciencedirect.com/science/article/pii/S0959652622050971#bib13. Accessed November 21, 2024.

CAPCOA (California Air Pollution Control Officers Association). 2008. *CEQA & Climate - Change Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January 2008. Available: https://www.contracosta.ca.gov/DocumentCenter/View/34122/CAPCOA-2008-CEQA-and-Climate-Change-PDF

CAPCOA (California Air Pollution Control Officers Association). 2022. California Emissions Estimator Model User's Guide Version 2022.1. April 2022. Available: https://www.caleemod.com/documents/user-guide/01_User%20Guide.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan*. Adopted December 11, 2008, re-approved by CARB on August 24, 2011. Available: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2011. *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles.* December 7, 2011. Available: http://www.arb.ca.gov/regact/2012/leviiighg2012/levisor.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2014. *First Update to the Climate Change Scoping Plan.* May 22, 2014. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2017. *California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 Greenhouse Gas Target*. November 2017. Available: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2020. *2020 SF6 Initial Statement of Reasons: Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear*. July 2020. Available: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/sf6/isor.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2022. *California's 2022 Scoping Plan for Achieving Carbon Neutrality.* November 16, 2022. Available: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf. Accessed November 21, 2024.

CARB (California Air Resources Board). 2024. *California Greenhouse Gas Emissions from 2000 to 2022: Trends of Emissions and Other Indicators.* Available: https://ww2.arb.ca.gov/sites/default/files/2024-09/nc-2000_2022_ghg_inventory_trends.pdf. Accessed November 21, 2024.

CEC (California Energy Commission). 2022. "2022 Total System Electric Generation." Available: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation. Accessed November 21, 2024.

Fresno COG (Fresno Council of Governments). 2022. *2022-2046 Regional Transportation Plan & Sustainability Communities Strategy.* July 8, 2022. Available: https://www.planfresno.com/planfresno/uploads/2022/07/FCOG-2022-RTP-SCS-Final-PEIR-070722-GV05.pdf. Accessed November 21, 2024.

Fresno County. 2024. *Fresno County General Plan Policy Document.* Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed November 21, 2024.

IPCC (Intergovernmental Panel on Climate Change). 2023: *Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]*. IPCC, Geneva, Switzerland, pp. 35-115. Available: https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf. Accessed November 21, 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2009a. *District Policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. December 17, 2009. Available: https://www.valleyair.org/Programs/CCAP/12-17-09/2%20CCAP%20-%20FINAL%20District%20Policy%20CEQA%20GHG%20-%20Dec%2017%202009.pdf. Accessed: November 21, 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2009b. *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*. December 17, 2009. Available: https://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf. Accessed November 21, 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2009c. *Final Staff Report: Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act*. December 2009. Available: https://ww2.valleyair.org/media/mdfm0lsd/1-ccap-final-ceqa-ghg-staff-report-dec-17-2009.pdf. Accessed November 21, 2024.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2015. *Guide for Assessing and Mitigating Air Quality Impacts*. March 19, 2015. Available: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed November 21, 2024.

USEPA (U.S. Environmental Protection Agency). 1998. *Bituminous and Subbituminous Coal Combustion*. Available: https://19january2021snapshot.epa.gov/sites/static/files/2020-09/documents/1.1_bituminous_and_subbituminous_coal_combustion.pdf. Accessed November 21, 2024.

USEPA (U.S. Environmental Protection Agency). 2000. *Stationary Gas Turbine.* Available: https://19january2021snapshot.epa.gov/sites/static/files/2020-10/documents/c03s01.pdf. Accessed November 21, 2024.

USEPA (U.S. Environmental Protection Agency). 2002. *SF_6 Emissions Reduction Partnership for Electric Power Systems – Program Report.* August 2002. Available: https://www.epa.gov/sites/production/files/2016-02/documents/eps_rep_02.pdf. Accessed November 21, 2024.

USEPA (U.S. Environmental Protection Agency). 2024. *Inventory of US Greenhouse Gas Emissions and Sinks 1990-2022.* Available: https://www.epa.gov/system/files/documents/2024-04/us-ghg-inventory-2024-main-text_04-18-2024.pdf. Accessed November 21, 2024.

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3.10 Hazards and Hazardous Materials

This section identifies and evaluates issues related to hazards and hazardous materials. 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 hazards and hazardous materials (Appendix A, *Scoping Report*). Issues and impact analyses concerning air quality, noise, and wildfire are presented in Section 3.4, *Air Quality*; Section 3.14, *Noise and Acoustics*; and Section 3.20, *Wildfire*, respectively.

This analysis is based on a Phase I environmental site assessment of the Project site conducted by Cameron-Cole, LLC (Appendix I). The preparers of this Draft EIR independently reviewed the California Department of Toxic Substances Control's (DTSC's) EnviroStor database, the State Water Resources Control Board's (State Water Board's) GeoTracker database, 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.

3.10.1 Setting

3.10.1.1 Study Area

The study area for assessing hazards and hazardous materials impacts consists of the Project site and its immediately adjacent area, with two exceptions discussed below. This is because impacts related to hazardous materials are generally site-specific and depend on the nature and extent of a potential hazardous materials release. For example, hazardous materials incidents tend to be limited to a localized area at and surrounding the immediate spill location. The study area for proximity to schools and airports extends to 0.25 mile and 2 miles, respectively, beyond the borders of the Project site. These distances are specified in the CEQA Guidelines Appendix G significance criteria. The distance for proximity to schools reflects that children are sensitive receptors. The distance for airports has been selected to allow analysis for constructed structures that might interfere with navigable airspace.

3.10.1.2 Environmental Setting

Definition of Hazardous Materials

A *hazardous material* is defined 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 if released into the workplace or the environment (California Health and Safety Code §25501[n]). The term *hazardous materials* refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). The four primary exposure pathways through which an individual can be exposed to a hazardous material or waste are inhalation (in the air), ingestion (in food or water), bodily contact (by touching), and injection (in a drug or through a wound).

In some cases, past industrial or commercial activities on a site have resulted in spills or leaks of hazardous materials or wastes to the subsurface, resulting in soil or groundwater contamination. Depending on the type

and concentration of contamination, hazardous materials can threaten human health and the environment if present in the soil, groundwater, or air. Exposure can result from an accidental release of hazardous materials during transport, storage, or handling. Disturbance of contaminated subsurface soil during construction also can cause exposure to workers, the public, or the environment through excavating, stockpiling, handling, or transport of such soils.

Project Site

As discussed in Appendix I, the Project site is currently undeveloped; however, based upon the nature of the land and review of various documents, it is evident that select areas of the subject property have been intermittently used for agricultural and animal grazing purposes. The surrounding area is generally rural, and much of the surrounding land has historically been used for undeveloped rangeland or intermittent agriculture. A small number of residential structures are located to the southeast of the Project site along State Route (SR) 33 (South Lost Hills Road). Southeast of the intersection of SR 33 and Sutter Avenue, bordering the Project site to the west, north, and east, there is a commercial property that hosts a warehouse.

Two subsurface petroleum product pipelines cross beneath the Project site.

Soil and Groundwater Contamination

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 §65962.5, which has been in effect since 1992. However, subsequent changes in web-based information availability since that time have made a consolidation of this list no longer necessary and various responsible agencies maintain the following lists and databases:

- List of Hazardous Waste and Substances sites from DTSC's EnviroStor database.
- List of Leaking Underground Storage Tank Sites by County and Fiscal Year from the State Water Board's GeoTracker database.
- List of solid waste disposal sites identified by the State Water Board with waste constituents above hazardous waste levels outside the waste management unit.
- List of "active" Cease and Desist Orders and Cleanup and Abatement Orders from the State Water Board.
- List of hazardous waste facilities subject to corrective action pursuant to Health and Safety Code §25187.5, as identified by DTSC and listed on its EnviroStor database.

The five databases cited above identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The State Water Board's GeoTracker database includes leaking underground storage tanks, permitted underground storage tanks, U.S. Department of Defense sites, and Cleanup Program sites. DTSC's EnviroStor database includes federal and state response sites; voluntary, school, and military cleanups and corrective actions; and permitted sites. The reporting and statuses of these sites change as identification, monitoring, and cleanup of hazardous materials sites progress. Typically, a listed site is considered no longer to be of concern once it has been

demonstrated that existing site uses combined with the levels of identified contamination present no significant risk to human health or the environment and the case is closed by the overseeing agency.

According to a review of the GeoTracker and EnviroStor databases, the Project site is not included as an active leaking underground storage tank site or a Cleanup Program site, nor are there any open cases within 1 mile of the Project site (State Water Board 2024; DTSC 2024). In addition, the Phase I assessment reviewed records of hazardous materials sites farther from the Project site to assess the potential for presence of contaminated groundwater. Although some hazardous materials sites were identified, given their status and distance from the Project site, Cameron-Cole established that the risk of migration of hazardous materials through groundwater from these sites was low.

Sensitive Receptors

Schools

The nearest school to the Project site is Reef-Sunset Middle School (205 North Park Avenue, Avenal), which is located approximately 3 miles from the Project site.

Daycare Centers

The nearest daycare center to the Project site is the KCAO Oasis Opportunity Daycare (1072 South 7th Avenue, Avenal), which is located approximately 4 miles from the Project site.

Hospitals

The nearest hospital to the Project site is the Coalinga Regional Medical Center (1191 Phelps Avenue, Coalinga), which is located approximately 9.5 miles from the Project site.

Lost Hills Community

The northeastern boundary of the Project site is adjacent to the western terminus of the Kettleman Hills, with vacant lands characterized by low, rolling hills. The southeastern portion of the Project site is directly adjacent to the unincorporated community of Lost Hills. Approximately eight existing residences and several structures within the Lost Hills community would be located adjacent to the Project boundary.

The Lost Hills community and the census tracts surrounding the Project site (Census Tracts 6019007902, 6019007801, 6031001601, and 6031001701) fall under the California Environmental Protection Agency's (CalEPA's) designation of disadvantaged communities, which are discussed further in Section 3.10.1.3. Disadvantaged communities are defined as census tracts that receive the highest 25 percent of overall scores in CalEnviroScreen, which is a metric used to score populations based on the cumulative pollution burden as well as the population's characteristics such as socioeconomic status. These communities face greater cumulative effects due to environmental hazards than non-disadvantaged communities.

Airports

The nearest airport to the Project site, Avenal Airport-CA69 (600 East Laneva Boulevard, Avenal), is approximately 4 miles from the Project site.

Wildland Fire Hazard

Wildfire is defined as an unplanned, unwanted wildland fire that can result from human-made or natural causes (Government Code §51177). Wildland fires affect grass, forest, and brushlands, as well as any

structures on these lands, creating potential for injury, loss of life, and property damage. Fuel sources, topography, and climate are the primary factors influencing the degree of risk. For this analysis of wildfire risk, emergency response and evacuation, and post-fire pollution and runoff-related impacts, the study area includes the Project site and the surrounding parcels and related access roads, structures, and vegetation. More specifically, this study area is located within Township 21 South, Range 16 East, Sections 34, 35, and 36; Township 22 South, Range 16 East, Sections 1 and 2; and Township 22 South Range 17 East, Section 6, Mount Diablo Base and Meridian, of the Avenal, California, U.S. Geological Survey 7.5-minute Topographical Quadrangle Map.

The Project site is located in a high Fire Hazard Severity Zone in a State Responsibility Area (Fresno County Fire Hazard Severity Zone). The State of California (through the California Department of Forestry and Fire Protection [CAL FIRE]) has the primary legal and financial responsibility for the prevention and suppression of wildland fires in State Responsibility Areas. Thus, the Project site would be under the responsibility of CAL FIRE (CAL Fire 2023). Further details on the fire risk present at the Project site are located in Section 3.20, *Wildfire.*

3.10.1.3 Regulatory Setting

Federal

The federal agencies with primary responsibility for hazards and hazardous materials management are the U.S. Environmental Protection Agency, the U.S. Occupational Safety and Health Administration, and the U.S. Department of Transportation. **Table 3.10-1** summarizes federal laws, regulations, and responsible agencies.

TABLE 3.10-1
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Federal Law or Responsible Federal Agency	Description
Hazardous Waste Handling and Management	Resource Conservation and Recovery Act of 1976	Under the RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from “cradle to grave.”
	Hazardous and Solid Waste Act	This law amended the RCRA in 1984, affirming and extending the “cradle-to-grave” system of regulating hazardous wastes. The amendments prohibit the use of certain techniques for disposal of some hazardous wastes.
	Toxic Substances Control Act	Title 40, Chapter 1, Subchapter R of the Code of Federal Regulations (Toxic Substances Control Act), Part 761 (PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions) covers the identification and sampling requirements for PCBs for disposal purposes.
	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act)	This law imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of, and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Materials Transportation	U.S. Department of Transportation	DOT has regulatory responsibility for the safe transportation of hazardous materials. DOT regulations govern all means of transportation except packages shipped by mail.
	U.S. Postal Service	USPS regulations govern the transportation of hazardous materials shipped by mail.

Classification	Federal Law or Responsible Federal Agency	Description
Occupational Safety	Occupational Safety and Health Act of 1970	OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries.
Structural and Building Components (Hazardous Building Materials [asbestos-containing materials, lead-based paint, and PCBs])	Toxic Substances Control Act	This law regulates the use and management of hazardous building materials and sets forth detailed safeguards to be followed during the disposal of such items.
	U.S. Environmental Protection Agency	USEPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

Notes: DOT = U.S. Department of Transportation; OSHA = U.S. Occupational Safety and Health Administration; PCB = polychlorinated biphenyl; RCRA = Resource Conservation and Recovery Act; USEPA = U.S. Environmental Protection Agency; USPS = U.S. Postal Service

Source: Data compiled by Environmental Science Associates in 2024

State

Several state agencies have primary responsibility for hazardous materials management in the region: DTSC and the Central Valley Regional Water Board (both part of CalEPA), California Occupational Safety and Health Administration, California Department of Public Health, California Highway Patrol, and California Department of Transportation (Caltrans). **Table 3.10-2** summarizes state laws, regulations, and responsible agencies.

TABLE 3.10-2
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
Hazardous Materials Management	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program; CUPA (Health and Safety Code §25404 et seq.)	CalEPA adopted regulations in January 1996 that implemented the Unified Program at the local level. The agency responsible for implementation of the Unified Program is called the CUPA. The CUPA for Fresno County is the County's HazMat Compliance Program.
	California Fire Code, Cal. Code Regs. Title 24, Chapter 9, and California Building Code, Part 2	The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures.
Hazardous Waste Handling	California Hazardous Materials Release Response Plan and Inventory Law of 1985; CUPA	The California Hazardous Materials Release Response Plan and Inventory Law of 1985, also known as the Business Plan Act, requires that any business that stores hazardous materials on-site prepare a Hazardous Materials Business Plan and submit it to the local CUPA, which in this case is the County's HazMat Compliance Program.
	California Hazardous Waste Control Act; California Health and Safety Code §25100 et seq.; DTSC	Under the California Hazardous Waste Control Act, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the 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. DTSC is also the administering agency for the California Hazardous Substance Account Act (California Health and Safety Code §25300 et seq.), also known as the State Superfund law, which provides for the investigation and remediation of hazardous substances pursuant to state law.

Classification	Law or Responsible State Agency	Description
Hazardous Materials Transportation	Cal. Code Regs. Titles 13, 22, and 26	These regulations governing the transportation of hazardous waste that originates in and passes through the state includes requirements for shipping, containers, and labeling.
	CHP and Caltrans; California Vehicle Code §§31303–31309	These two state agencies have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies.
Occupational Safety	Cal/OSHA regulations (Cal. Code Regs. Title 8)	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 standards are generally more stringent than federal regulations. They require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans.
Construction Storm Water General Permit (Construction General Permit; Order 2022-0057-DWQ, NPDES No. CAS000002)	Regional water boards	A discharger whose project disturbs 1 acre or more of soil, or disturbs less than 1 acre but is part of a larger common plan of development that in total disturbs 1 acre or more, must obtain coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Order 2022-00547-DWQ). Construction activity subject to this permit includes clearing, grading, grubbing, and other disturbances to the ground such as excavation and stockpiling, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. The Construction General Permit requires the development and implementation of a SWPPP that includes specific BMPs designed to prevent sediment and pollutants from contacting stormwater from moving off-site into receiving waters. The BMPs fall into several categories—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.
Underground Infrastructure	Cal. Code Regs. §§4216 through 4216.9	Sections 4216–4216.9 (Protection of Underground Infrastructure) require that an excavator contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least 2 days before excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific locations of their facilities within the work area before the start of project activities in the area.

Notes: BMP = best management practice; Cal. Code Regs. = California Code of Regulations; Cal/OSHA = California Occupational Safety and Health Administration; CalEPA = California Environmental Protection Agency; Caltrans = California Department of Transportation; CHP = California Highway Patrol; Construction General Permit = General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities; County = Fresno County; CUPA = Certified Unified Program Agency; DTSC = California Department of Toxic Substances Control; NPDES = National Pollutant Discharge Elimination System; OSHA = U.S. Occupational Safety and Health Administration; regional water board = regional water quality control board; SWPPP = storm water pollution prevention plan; Unified Program = Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Source: Data compiled by Environmental Science Associates in 2023

California Department of Pesticide Regulation

The California Department of Pesticide Regulation (CDPR) is responsible for regulating the use of pesticides in California. The term *pesticides* includes pesticides, herbicides, insecticides, nematicides, fungicides, and rodenticides. CDPR evaluates and registers pesticides, monitors their sale and use, and enforces regulations to protect human health and the environment, as required by California Code of Regulations (Cal. Code Regs.) Title 3, *Food and Agriculture*, Division 6. *Pesticides and Pest Control Operations*.

Additional State Regulations

The California Code of Regulations contains the following additional requirements that would apply to the Project:

- **High Voltage Electrical Safety Orders** (8 Cal. Code Regs. §2700 et seq.), which establish essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger.
- **Fire Prevention Standards for Electric Utilities** (14 Cal. Code Regs. §§1250–1258), which provide specific exemptions from standards for electric pole and tower firebreaks and electric conductor clearance and specify when and where the standards apply. These regulations establish minimum clearance requirements for flammable vegetation and materials surrounding structures.
- **Standards for Universal Waste Management** (22 Cal. Code Regs. §66273), which regulate the management of universal wastes. California considers batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes and tube glass, and aerosol cans to be universal wastes. To encourage recycling of these wastes, they are not fully regulated as hazardous waste. A person or business who generates universal waste must follow the Management Requirements for Universal Waste Handlers (22 Cal. Code Regs. §§66273.30 through 66273.39), which include storage, spill protection, and disposal rules designed to minimize the risk of harm to public health and the environment.

Emergency Response

The California Governor's Office of Emergency Services developed and administers the State of California Emergency Plan (Cal OES 2017) to coordinate the responses of federal, state, local, and private emergency service providers to natural or human-caused emergencies. Responding to hazardous materials incidents is one part of this plan. The California Governor's Office of Emergency Services is currently developing the 2024 California State Emergency Plan (Cal OES 2024).

Senate Bill 535 Disadvantaged Communities

Disadvantaged communities in California are specifically targeted for investment of proceeds from the State of California's Cap-and-Trade Program. These investments are aimed at improving public health, quality of life, and economic opportunity in California's most burdened communities, and at the same time, reducing pollution that causes climate change. The investments are authorized by the California Global Warming Solutions Act of 2006.

In 2012, Senate Bill (SB) 535 established initial requirements for minimum funding levels to "disadvantaged communities." The legislation also gives CalEPA the responsibility for identifying those

communities, stating that CalEPA's designation of disadvantaged communities must be based on "geographic, socioeconomic, public health, and environmental hazard criteria."

In 2016, Assembly Bill (AB) 1550 (Gomez, Chapter 369, Statutes of 2016) directed CalEPA to identify these communities. *Disadvantaged communities* are defined as census tracts that receive the highest 25 percent of overall scores in CalEnviroScreen, which is a metric used to score populations based on the cumulative pollution burden as well as the population's characteristics such as socioeconomic status. The Project site is located in census tracts designated as disadvantaged communities (Census Tracts 6019007902, 6019007801, 6031001601, and 6031001701). These communities face greater cumulative effects due to environmental hazards than non-disadvantaged communities.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County

Fresno County General Plan

Planning for growth and development requires the consideration of a wide range of public safety issues. Some safety hazards are naturally induced, such as seismic and geologic hazards, flooding, and wildland fire hazards. Some hazards are the result of natural hazards that are exacerbated by human activity and alteration of the natural environment, such as dam failure and development in sensitive areas such as floodplains or areas subject to erosion and landslides. Finally, some hazards are human-made, including airport crash hazards, hazardous materials, and crime. In addition to safety issues related to hazardous conditions, the planning process should account for other issues related to community health and safety, such as noise exposure (Fresno County 2024a). The following goals and policies of the Fresno County General Plan related to hazards and hazardous materials 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.5 Minimize Fire Hazard Risk:*** The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.
> >
> > ***Policy PF-H.10 California Fire Code:*** The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the California Fire Code and other State and local ordinances.
> >
> > ***Policy OS-G.11 Sensitive Receptors:*** The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include, but are not limited to, industrial and manufacturing uses and any other uses which have the potential for creating a hazardous or nuisance effect.

Goal HS-A: To protect public health and safety by preparing for, responding to, and recovering from the effects of natural or technological disasters

Policy HS-A.1 Operational Area Master Emergency Service Plan: The County shall, through the Fresno County Operational Area Master Emergency Services Plan and the Fresno County Multi-Hazard Mitigation Plan, maintain the capability to effectively respond to emergency incidents, including maintenance of an emergency operations center.

Policy HS-A.2 Multi-Jurisdictional Hazard Mitigation Plan*:* In coordination with cities, special districts, and other State and Federal agencies, the County shall maintain the Fresno County Multi-Jurisdictional Hazard Mitigation Plan to identify and mitigate, to the extent feasible, natural and human-made hazards within the county.

Policy HS-A.4 Critical Emergency Response Facility Siting*:* The County shall ensure that the siting of critical emergency response facilities such as hospitals, fire stations, sheriff's offices and substations, dispatch centers, emergency operations centers, and other emergency service facilities and utilities are sited and designed to minimize their exposure and susceptibility to flooding, seismic and geological effects, fire, landslides, avalanche, and explosions as required by State regulations. This includes locating new essential public facilities outside of Very High Fire Hazard Severity Zones, if feasible. Exception to this policy shall be allowed on the condition that the only alternative location would be so distant as to jeopardize the safety of the community, given that precautions are taken to protect the facility.

Policy HS-A.6 Emergency Preparedness Public Awareness Programs*:* The County shall support local fire agencies through distribution of information during the permit process, through links on County websites, and by providing assistance at public meetings, in promoting the education of County residents concerning emergency preparedness, defensible space, and safety, as described in the Fresno-King Unit Fire-Plan information and public education outreach programs, focusing on the most vulnerable at-risk communities such as those in the Very High Fire Hazard Severity Zone.

Policy HS-A.7 Building Design*:* The County shall review the design of all buildings and structures in the Very High Fire Hazard Severity Zones and State Responsibility Areas to ensure they are designed and constructed to State and local regulations and standards as part of the building permit plan check process.

Policy HS-A.8 Transportation Corridors and Evacuation Routes: The County shall continue to improve community transportation corridors to allow for effective evacuation routes for the public and effective access for emergency responders, including in areas that lack more than two emergency access routes.

Policy HS-A.12 Access/Evacuation Routes: Establish minimum standards for evacuation, including in the Very High Fire Hazard Severity areas, in the Emergency Operations Plan and continuously reassess access and evacuation route capacity and put mitigation measures and improvement plans in place if needed

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 Fire Hazards Review*:* 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.2 Minimize Fire Hazard Risk Design: The County shall ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards by increasing resistance of structures to heat, flames, and embers. The County shall review current building code standards and other applicable statutes, regulations, requirements, and guidelines regarding construction, and specifically the use and maintenance of non-flammable materials (both residential and commercial) and consider adopting amendments to Title 15 of the County Ordinance Code (Building and Construction) to implement appropriate standards. Special consideration shall be given to the use of fire-resistant construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas of steep slopes.

Policy HS-B.4 Fire Risk Management*:* The County shall require that new discretionary development including residential subdivisions and large commercial proposals in high-fire-hazard areas have fire-resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

Policy HS-B.5 Landscape Features*:* In consultation with the local fire agency and CalFire, the County shall require structures to be sited to maximize low-flammability landscape features to buffer against wildfire spread. Consultation with the local fire agency will be necessary to make this determination.

Policy HS-B.20 Route Capacity, Safety and Visibility*:* As part of the next update to the Fresno County Multi-Hazard Mitigation Plan, the County, working with emergency service agencies, shall evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios to facilitate fire, law enforcement, and ambulance access and resident egress, consistent with the existing goals and objective of the Fresno County Multi-Hazard Mitigation Plan.

Policy HS-B.21 Fuel Loads on Federal Lands: The County shall collaborate with federal agencies to better manage fuel loads and hazards that could impact County owned/operated infrastructure on federally owned or managed lands.

Policy HS-B.30 Hazard Mitigation Plan*:* The County shall, if necessary, revise the Health and Safety Element upon each revision of the Housing Element or Fresno County Multi-Hazard Mitigation Plan, but not less than once every eight years, to identify new information relating to flood and fire hazards and climate adaptation and resiliency strategies applicable to the county.

Goal HS-E: To minimize the exposure of the public to high noise levels and safety hazards through land use controls and policies for property in the vicinity of airports; and to limit urban encroachment around airports in order to preserve the safety of flight operations and the continued viability of airport facilities.

Policy HS-E.1 Airport Land Use Policy Plans: The County shall limit land uses in airport safety zones to those uses listed in the applicable CLUPPs [comprehensive land use policy plans] as compatible uses. Exceptions shall be made only as provided for in the CLUPPs. Such uses shall also be regulated to ensure compatibility in terms of location, height, and noise.

Policy HS-E.2 Airport Safety Hazards: The County shall ensure that new development, including public infrastructure projects, does not create safety hazards such as glare from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.

Policy HS-E.3 Federal Airport Safety Zones: The County shall ensure that development, including public infrastructure projects, within the airport approach and departure zones complies with Part 77 of the Federal Aviation Administration Regulations (Objects Affecting Navigable Airspace).

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 Hazardous Materials Facilities*:* The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

Policy HS-F.2 Hazardous Waste Applications*:* The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.

Policy HS-F.3 Hazardous Materials Incident Response Plan: 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.

Policy HS-F.4 Soil and Groundwater Contamination Reports: For redevelopment or infill projects or where past site uses suggest environmental impairment, the County shall require that an investigation be performed to identify the potential for soil or groundwater contamination. In the event soil or groundwater contamination is identified or could be encountered during site development, the County shall require a plan that identifies potential risks and actions to mitigate those risks prior to, during, and after construction.

Policy HS-F.5 Demolition Standards: The County shall require that demolition of structures where friable asbestos or other hazardous materials could be released into the environment comply with applicable regulations and standards.

Policy HS-F.6 Timely Site Cleanup: The County shall work cooperatively with the State Department of Toxic Substances Control and Regional Water Quality Control Board to promote the timely and efficient cleanup of contaminated sites under the regulatory oversight of these agencies.

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 the County as the Operational Area Lead Agency (Fresno County 2024a). The Fresno County Office of Emergency Services coordinates the development and maintenance of the Fresno County Hazard Mitigation Plan (Fresno County 2024b). This plan serves as a guide for the County's response to emergencies/disasters in the unincorporated areas of Fresno County and identifies emergency facilities in the county.

The Emergency Operations Center is located in downtown Fresno, approximately 51 miles northeast of the Project site. Public junior high and high schools throughout the county are the primary resources available for use as public shelters during disasters. Public elementary schools, County fairgrounds, community centers, auditoriums, armories, churches, and some commercial and industrial buildings are

possible shelter sites for large evacuated populations in locations where junior high and high schools are not available. Emergency and fire services are handled by the County. See Section 3.16, Public Services, for details about emergency response services in the Project area.

Fresno County Solar Facility Guidelines

The County has established solar facility guidelines for applicants desiring to construct and operate such facilities in Fresno County (Fresno County 2017). The guidelines specify the information that applicants must provide during the application review process. The required information includes descriptions of the proposed project, the site's agricultural history, the water supply source, the site's legal status (e.g., Williamson Act contracts, easements, and liens), buffers with adjacent land uses, pest management plans, and reclamation plans for decommissioning the facility.

3.10.2 Significance Criteria

The Project would result in a significant impact related to hazards and hazardous materials if it would do any of the following:

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 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 §65962.5 and, as a result, would 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 2 miles of a public airport or public use airport, 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.

g) Expose people or structure, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.10.3 Direct and Indirect Effects

3.10.3.1 Methodology

Overall

The following impact analysis considers the potential impacts related to hazards and hazardous materials associated with the Project's construction, operation and maintenance (O&M), and decommissioning phases. This analysis assumes Project compliance with applicable federal, state, and local laws and regulations and implementation of the other identified Applicant-proposed measures. Further, state and local agencies are expected to continue to enforce applicable requirements to the extent that they do so

now. The analysis is based on the Phase I environmental site assessment conducted for the Project and a review of relevant literature and occurrences databases, such as the State Water Board GeoTracker and DTSC EnviroStor websites.

Given the Project's proximity to disadvantaged communities as identified by CalEPA, criterion c) has been expanded to include sensitive receptors such as hospitals and the Lost Hills community.

Impacts related to hazards and hazardous materials would be considered significant if the Project would result in exposure of people and the environment to hazardous materials, be located on a listed hazardous materials site, or have the potential to conflict with an established airport land use compatibility plan or emergency response/evacuation plan.

Battery Energy Storage System

Battery energy storage systems (battery ESSs) are used across the United States in residential, commercial, and utility-scale applications. Battery ESSs most often use multiple lithium-ion battery cells. These lithium batteries can produce hazardous outcomes through multiple avenues of abuse, neglect, or environmental impacts. Lithium cells can experience thermal runaway, which causes them to release very hot flammable, toxic gases. In large storage systems, failure of one lithium cell can cascade to include hundreds of individual cells. The hot flammable gases can result in an explosion, or a very-difficult-to-extinguish fire.

While fire services routinely respond to explosive scenarios, such as those associated with natural gas leaks, standard operating procedures do not exist for scenarios like a battery ESS for which there is no way to cut off the gas supply (FEMA 2020). Sodium-sulfur batteries have a similar safety concern during operation, as molten sodium combined directly with molten sulfur can lead to a highly exothermic, toxic fire. Modern manufacturing of sodium-sulfur batteries has developed solutions to this challenge, employing measures such as sand filling to extinguish fire and absorb leaked active materials, thermal fuses to prevent short-circuits, hermetical cell seals, and a mechanically isolating thermal enclosure to protect against external shock or internal leakage (U.S. Department of Energy 2024). Flow batteries are generally considered safer, although flow battery electrolytes are often strong acids and bases carrying high concentrations of metal ions. Hazard mitigation typically involves additional containment for any electrolyte that spills out of the primary system containment (U.S. Department of Energy 2024). Risks related to liquids in a flow battery are related to their toxicity, corrosiveness, environmental impact, and flammability (Trovo et al. 2023).

Battery ESSs, such as those designed for the Project, are equipped with several advanced containment and safety features to ensure reliability and safety. These systems typically include robust thermal management solutions to prevent overheating and thermal runaway. They are also designed with fire suppression systems, often incorporating clean agents or aerosol-based technologies to quickly extinguish fires without damaging the equipment. Additionally, battery ESS systems feature advanced battery management systems that continuously monitor the strength and performance of each cell, providing real-time diagnostics and ensuring that cells operate within safe parameters. Enclosure units are built to be fire-resistant and are often designed to vent gases safely in case of cell failure. These features, combined with stringent safety protocols and regular maintenance, contribute to the high safety standards of today's ESS systems.

The Project will adhere to the Current National Fire Protection Association (NFPA 855) standards for battery storage systems.

Photovoltaic Solar Panels

Photovoltaic solar panels used as part of the Project would be composed of crystalline silica. Crystalline silica dust, a byproduct of crystalline silica, is classified as a known human carcinogen by the International Agency for Research on Cancer. High exposure to crystalline silica dust shows increased risk of developing lung cancer, obstructive pulmonary disease, rheumatoid arthritis, scleroderma, Sjogren's syndrome, lupus, and renal disease. However, because solar panels are encased in heavy-duty glass or plastic, there is little risk that the small amounts of semiconductor material present can be released into the environment. In the event of a fire, it is theoretically possible for hazardous fumes to be released, and inhalation of these fumes could pose a risk to human health (Department of Transportation 2024).

Integrated Pest Management Plan

To manage vegetation and comply with CDPR regulations for the use of herbicides, the Applicant has prepared an Integrated Pest Management Plan (Appendix B.1) to establish use procedures. Weed management contractors/personnel responsible for herbicide application shall obtain required federal, state, or local agency permits, as needed; hold all necessary certifications; and have received all relevant training. A licensed contractor shall apply herbicides in accordance with all applicable laws, regulations, and permit stipulation, including U.S. Environmental Protection Agency label instructions and CDPR regulations. Herbicides shall not be applied during the following conditions:

- Wind velocities in excess of 10 miles per hour during application of liquid herbicides and 15 miles per hour during application of dry herbicides.
- When snow or ice is present on plant foliage.
- Within 12 hours of forecasted rain, or when plant surfaces are covered with water from recent rainfall or dew.

Herbicides shall be handled and transported accordingly:

- No herbicides shall be stored in bulk on-site.
- Only the quantity of herbicide expected for each day's use shall be transported.
- Herbicide concentrate shall be transported in approved containers in a controlled manner to prevent spills. Concentrate shall be positioned in delivery or work vehicles in a secured manner and separated from the driving compartment, food, clothing, and safety equipment.
- All mixing shall take place over a drip/spill containment device and at a distance more than 200 feet from open or flowing water, wetlands, or other sensitive resources.
- Herbicides shall not be applied to areas of open or flowing water, wetlands, or other sensitive resources unless authorized by the appropriate regulatory agency.
- All equipment and containers used for herbicide storage, application, and transport shall be subject to inspection for leaks or damage.
- Emptied herbicide containers shall be disposed of in accordance with instructions provided on the label.

3.10.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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 3.10-1: Implementation of 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 39 months, broken out into three phases: the solar facility, the ESS, and the Pacific Gas and Electric Company (PG&E) improvements, with the ESS and PG&E improvements overlapping. During the construction phase, construction equipment and materials would include fuels, oils and lubricants, solvents and cleaners, cements and adhesives, paints and thinners, degreasers, and cement and concrete, which are all commonly used in construction. The routine use or an accidental spill of hazardous materials could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment.

Construction activities would be required to comply with numerous hazardous materials regulations described in in Section 3.10.1.3, *Regulatory Framework,* designed to ensure that hazardous materials would be transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies. Contractors would be required to prepare and implement Hazardous Materials Business Plans (HMBPs) requiring that hazardous materials used for construction be used properly and stored in appropriate containers with secondary containment to contain a potential release. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

The application of pre-emergent herbicides may be applied to on-site soils during site preparation. The use of herbicides is regulated by CDPR (see Section 3.10.1.3, *Regulatory Setting*, under *California Department of Pesticide Regulation*). The Applicant has prepared an Integrated Pest Management Plan (Appendix B.1) to establish use procedures and comply with CDPR regulations. Safety data sheets for all applicable materials present at the site would be made readily available to on-site personnel. The use of herbicides would be in accordance with manufacturers' specifications.

The Project would involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transport Uniform Safety Act. The majority of the waste generated during construction would occur during building construction, would be non-hazardous, and would consist primarily of cardboard, wood pallets, 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. Construction would generate an average of approximately 80 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.

The Project site is largely undeveloped, with evidence of previous intermittent rangeland and agricultural use. These previous land uses could have included the use of pesticides, which could pose a hazard if concentrated in soils on-site. 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 pesticides to a less-than-significant level.

With compliance with existing regulations and these protections in place, Project construction would result in a less-than-significant impact related to the creation of a potential significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, as well as the prevention and handling of any accidental hazardous materials exposure.

Operation and Maintenance

Project O&M activities may involve the transportation, use, or temporary storage of a variety of hazardous materials, such as batteries, hydraulic fluid, diesel fuel, insulation oil for the transformers, grease and lubricants, paints and thinners, solvents, and adhesives. The Project substation would include transformers, breakers, switches, meters, and related equipment that would require routine maintenance.

O&M activities associated with the solar facility would require relatively minor use of hazardous materials. Most O&M activities would take place in the new O&M building. Any hazardous materials that would be stored on-site would be contained in designated areas in accordance with an HMBP. 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. Solar panel cleaning would occur as needed, using demineralized water. The site would be fenced to prevent public access to hazardous materials.

O&M activities otherwise generally would be limited to performing visual inspections, monitoring plant performance, executing minor repairs, and responding to plant adjustment. On intermittent occasions, repairs or replacement of equipment, and other specialized maintenance may occur. Repair and maintenance activities may involve the transportation, use, or temporary storage of a variety of hazardous materials such as batteries, hydraulic fluid, diesel fuel, insulation oil for the transformers, grease, lubricants, paints, solvents, and adhesives. The site would employ up to six full-time employees, as needed, with 24-hour surveillance at the remote-operations control center. Up to 22 employees may be needed for repairs or maintenance on an as-needed basis.

Heavy equipment is not expected to be used during normal operation. Large or heavy equipment may be brought to the facility infrequently for equipment repair or replacement or vegetation control. Long-term maintenance and equipment replacement would be scheduled in accordance with manufacturer recommendations to ensure that equipment integrity is maintained. The solar modules would consist of durably constructed units designed to withstand exposure to the elements for a period of 35 years or more. The substation would have an electrical control building, which would house substation and plant control equipment, meters, battery or generator backup and other electrical equipment. The electrical control building would be located next to the substation.

Pre-emergent herbicides, if used during operations 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 CDPR regulations and the HMBP to prevent their accidental release at the site. Vegetation would otherwise be managed through the use of sheep grazing throughout the Project site once it is operational. The Applicant has contracted with a local vendor to provide sheep grazing services. By grazing on the vegetation underneath and surrounding the photovoltaic (PV) arrays, the sheep would help reduce fire fuel loads risk and prevent vegetation from encroaching on sensitive, high-value power-generating equipment and infrastructure.

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. All waste would be handled by a standard third-party waste management service.

Dust palliatives and herbicides may be transported to the Project site if they are used during operations to control vegetation. These materials would be stored in appropriate containers to prevent accidental release. Equipment containing hazardous materials would be prepared with spill containment areas and battery storage would be in accordance with U.S. Occupational Safety and Health Administration requirements such as inclusion of heating, ventilation, air conditioning, fire protection systems, and spill response supplies. All components would have a comprehensive Spill Prevention, Control, and Countermeasure plan, in accordance with all applicable federal, state, and local regulations if storage exceeds 1,320 gallons or the SPCC plan thresholds. Therefore, 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.

Closure, Decommissioning, and Site Restoration

Within a roughly 10- to 12-month time frame immediately preceding termination of the approved use, 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.2, *Solar Reclamation Plan*.

During the Project's decommissioning and site restoration process, it is anticipated that Project structures would be removed to a depth between 18 inches and 4 feet below the ground surface. Aboveground equipment that would be removed would include steel poles and foundations, electrical wiring, equipment on the inverter pads, transformer pads, fuel tank, emergency generator, telecommunications equipment, and other associated equipment. Equipment would be de-energized before removal, salvaged or recycled (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off-site. Removal of the solar modules would include removal of the racks on which the solar panels were attached and their placement in secure transport crates inside a storage trailer, for ultimate transportation to another facility. All remaining oil and lubricants removed from the equipment and any remaining fuel in the emergency generator fuel tank would be transferred to an appropriate container and disposed of in accordance with the manufacturers' specifications, consistent with applicable regulatory requirements outlined in Section 3.10.1.3, *Regulatory Setting*.

Once the solar modules have been removed, the racks would be disassembled and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences; concrete pads that may support the inverters, transformers, and related equipment; and underground conduit/electrical wiring. All materials would be recycled to the extent feasible. The area would be thoroughly cleaned and all debris removed. Given adherence to all applicable federal, state, and local regulations for decommissioning and disposal of Project components, including the solar panels, the Project would have a **less-than-significant impact** related to the routine transport, storage, and disposal of hazardous materials.

Summary of Impacts

The Project would involve the use of hazardous materials for all Project components and all Project phases. Compliance with applicable federal, state, and local requirements and related best management practices (BMPs) and plans would ensure that the Project would not create a significant hazard to the public through the routine transport, use, or disposal of these hazardous materials. Therefore, this impact would be **less than significant**.

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 3.10-2: Implementation of the Project would not create a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (*Less-than-Significant Impact*)

Construction

As discussed in Impact 3.10-1, the Project would involve the use, transportation, and disposal of hazardous materials and wastes. The Project would comply with all applicable local, state, and federal requirements and related BMPs.

Accidental spills resulting from construction activities are typically small, localized, and cleaned up in a timely manner. Construction contractors are contractually responsible for their hazardous materials and are required under their contracts to store and dispose of these materials properly in compliance with federal and state laws, including through implementation of an HMBP. As discussed above, the HMBP would include BMPs for construction activities, as well as spill control and spill response measures. In the unlikely event of a spill, the HMBP would include appropriate measures to ensure that workers cease work activities to contain any release and enact the protocols for cleanup, including the notification of appropriate agencies and the use of materials stored on-site (e.g., absorbent pads) to minimize the spread or exposure. In addition, as discussed previously, the Project would be subject to the protections included in a storm water pollution prevention plan (SWPPP), which would outline BMPs to contain a potential release and to prevent any such release from reaching an adjacent waterway or stormwater collection system (e.g., erosion control, sediment control, and waste management). Therefore, implementation of the requirements of HMBPs and the site-specific SWPPP would ensure that accidental spills would not adversely affect construction workers or the environment. Compliance with applicable federal, state, and

local requirements and implementation of the Applicant's design features would ensure that the Project would not create a significant hazard to the public through the accidental release of hazardous materials.

As discussed in Section 3.10.1, *Setting*, there are two subsurface petroleum product pipelines at the Project site that if disturbed (through excavation, grading, or other earthwork), could result in the accidental exposure of workers and the environment to hazardous materials. As discussed in 3.10.1.3, *Regulatory Setting*, state law requires an excavator to contact a regional notification center to identify any underground utility before excavation activities. Therefore, any utilities would be identified before excavation. In addition, and as shown on the site plans in Chapter 2, *Project Description*, the Project design has accounted for the location of the natural gas pipeline and easement. As a result, the natural gas pipeline would not be disturbed during construction activities.

Operation and Maintenance

O&M activities associated with the solar facility would require relatively minor use of hazardous materials. Most O&M activities would take place in the new O&M building. Any hazardous materials that would be stored on-site would be contained in designated areas in accordance with an HMBP. 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. Solar panel cleaning would occur as needed, using demineralized water. The site would be fenced to prevent public access to hazardous materials.

Lithium-ion batteries, sodium-sulfur, and flow batteries, found in battery ESSs, can produce significant amounts of flammable gases with potential risk of deflagration and fire when compromised. As discussed in Section 2.5.2.6, *Hazardous Waste and Hazardous Materials,* and Section 3.10.3.1, *Methodology*, battery ESSs are equipped with several advanced containment and safety features to ensure reliability and safety. These systems typically include robust thermal management solutions to prevent overheating and thermal runaway. They are also designed with fire suppression systems, often incorporating clean agents or aerosol-based technologies to quickly extinguish fires without damaging the equipment. Additionally, battery ESS systems feature advanced battery management systems that continuously monitor the strength and performance of each cell, providing real-time diagnostics and ensuring cells operate within safe parameters. Enclosure units are built to be fire-resistant and are often designed to vent gases safely in case of cell failure. In addition, an emergency response plan would be implemented as described in Section 2.9.1.10 *Emergency Response Plan*. The plan would be completed in accordance with existing state regulations (Health and Safety Code §25504[b]; 19 Cal. Code Regs. §2731; 22 Cal. Code Regs. §66262.34[a][4]). The contents of the emergency action plan would comply with existing state regulations, would be developed in consultation with the fire department and energy storage system supplier, and would include defined roles and responsibilities and training for local first responders. These features, combined with stringent safety protocols and regular maintenance, contribute to the high safety standards of today's ESS systems. Incidents involving wildfire or fire management are discussed in **Impact 3.10-5** below.

Project solar panels would be composed of crystalline silicone. As discussed in Section 3.10.1.2, *Environmental Setting*, solar panel production generates a byproduct, crystalline silica dust, which is classified as a known human carcinogen by the International Agency for Research on Cancer. However, because solar panels are encased in heavy-duty glass or plastic, there is little risk that the small amounts

of semiconductor material present can be released into the environment. The PV modules used for the Project would conform to testing standards set by the International Electrotechnical Commission. These testing standards include International Electrotechnical Commission 61215: Standards for crystalline silicon terrestrial PV modules (JinkoSolar 2024). In addition, the PV modules also conform to Underwriters Laboratory 1703, a standard established by the independent product safety certification organization. In accordance with Underwriters Laboratory 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and to monitor their performance (JinkoSolar 2024).

Lithium, sodium-sulfur, or flow batteries would be used at the site and would either be contained within steel enclosures within the ESS facility or distributed throughout the solar facility within metal housing units. Dust palliatives and herbicides may be transported to the Project site if they are used during operations to control vegetation. These materials would be stored in appropriate containers to prevent accidental release. Equipment containing hazardous materials would be equipped with spill containment areas, and battery storage would be in accordance with U.S. Occupational Safety and Health Administration requirements such as inclusion of heating, ventilation, air conditioning, fire protection systems, and spill response supplies. All components would have a comprehensive Spill Prevention, Control, and Countermeasure plan, in accordance with all applicable local, state, and federal regulations. Therefore, 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.

Closure, Decommissioning, and Site Reclamation

Within a roughly 10- to 12-month time frame 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.2, *Solar Reclamation Plan*.

During the Project's decommissioning and site restoration process, it is anticipated that Project structures would be removed to a depth between 18 inches and 4 feet below the ground surface. Above-ground equipment that would be removed would include steel poles and foundations, electrical wiring, equipment on the inverter pads, transformer pads, fuel tank, emergency generator, telecommunications equipment, and other associated equipment. Equipment would be de-energized prior to removal, salvaged or recycled (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off-site. Removal of the solar modules would include removal of the racks on which the solar panels were attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility. All remaining oil and lubricants removed from equipment and any remaining fuel in the emergency generator fuel tank would be transferred to an appropriate container and disposed of in accordance with the manufacturers' specifications and consistent with applicable regulatory requirements, outlined in Section 3.10.1.3, *Regulatory Setting*.

Once the solar modules have been removed, the racks would be disassembled, and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences, concrete pads that may support the inverters, transformers and related equipment, and underground conduit/electrical wiring. All materials would be recycled to the extent feasible. The area would be thoroughly cleaned, and all debris removed. Given adherence to all applicable federal, state, and

local regulations, decommissioning and disposal of Project components, including the solar panels, would have a **less-than-significant impact** related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Mitigation: None required.

Criterion c) Whether the Project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Impact 3.10-3: The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing sensitive receptor. *(Less-than-Significant Impact)*

The Project is not located within one-quarter mile of an existing or proposed school, daycare, or hospital. However, the southeastern portion of the Project site is directly adjacent to the unincorporated community of Lost Hills. Approximately eight existing residences and several structures within the Lost Hills community would be located adjacent to the Project boundary. The Lost Hills community, as well as the surrounding census tracts (Census Tracts 6019007902, 6019007801, 6031001601, and 6031001701) have been identified as "disadvantaged communities" by CalEPA. These communities face greater cumulative effects due to environmental hazards than non-disadvantaged communities.

While the Project would use hazardous materials and produce hazardous waste as discussed in **Impact 3.10-1**, hazardous materials on-site would be used, transported, and disposed of in accordance with federal, state, and local laws and regulations. The Project would also implement an Emergency Action Plan as detailed in Section 2.9.1.10 to address the accidental release of hazardous materials or accident conditions related to battery ESS failure or a fire on-site. Compliance with applicable federal, state, and local requirements and related BMPs and plans would ensure that the Project would not create a significant hazard to any sensitive receptors through the routine transport, use, or disposal of these hazardous materials. Therefore, this impact would be **less than significant**.

Mitigation: None required.

Criterion d) Whether the Project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment.

The Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, the Project would not create a significant hazard to the public or the environment. There would be no impact. (*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 2 miles of a public airport or public use airport and would therefore result in a safety hazard or excessive noise for people residing or working on the Project site.

The Project site is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The Project would therefore not result in a safety hazard or excessive noise for people residing or working on the Project site. (*No impact*)

Criterion f) Whether the Project would impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact 3.10-4: Implementation of the Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. ***(Less than Significant with Mitigation Incorporated)***

As discussed in Section 2.9.1.7, *Emergency Action Plan*, the Applicant proposes to construct and operate the facility in accordance with all applicable statutes, regulations, and other requirements, including by developing an emergency action plan in advance of construction to train local emergency response personnel during development and operation of the facility. The plan would be completed in accordance with existing state regulations (Health and Safety Code §25504[b]; 19 Cal. Code Regs. §2731; 22 Cal. Code Regs. §66262.34[a][4]). The contents of the emergency action plan would comply with existing state regulations, would be developed in consultation with the Fresno County Fire Department and energy storage system supplier, and would include defined roles and responsibilities and training for local first responders. With successful implementation of the emergency action plan, impacts on emergency response would be less than significant.

The Project site is located off SR 33. There are no planned road closures as part of Project construction, O&M, or decommissioning. The Project site would be accessible, including to emergency vehicles, from SR 33 and Sutter Avenue, both of which are paved public roads. Up to 13 entrances would be available to the site. Site access points would comply with requirements set forth by CAL FIRE or the Fresno County Fire Protection District to ensure adequate emergency access. Additionally, road improvements as required by the Fresno County Road Maintenance and Operations Division would be implemented prior to the initiation of Project O&M. All designated access roads would provide sufficient space for emergency response vehicles. There are no pre-designated evacuation routes established by Fresno County, however, additional traffic during the construction or decommissioning phases may affect SR 33, which could impact potential evacuation routes in an emergency.

To ensure that the construction and decommissioning phases of the Project would not delay emergency response vehicles or preclude evacuation efforts due to increased work traffic, implementation of **Mitigation Measure 3.10-1** would be required.

Mitigation Measure 3.10-1 requires the preparation and implementation of a traffic management plan addressing traffic safety and control through the work zone, including during temporary lane closures, and

requires that appropriate signage be provided along the affected routes to indicate the hazard and advise alternative routes.

Mitigation Measure 3.10-1: Construction Traffic Management Plan
At least 30 days before the issuance of construction or building permits, the Applicant and/or its construction contractor shall prepare and submit a traffic management plan to the Fresno County Public Works Department and Caltrans District 6, as appropriate, for approval. The traffic management plan must be prepared in accordance with both the Caltrans *Manual on Uniform Traffic Control Devices* and *Work Area Traffic Control Handbook* and must include, but not be limited to, the following elements:

- A temporary traffic control 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.
- Identification of the timing of deliveries of heavy equipment and building materials and duration of proposed road closures or obstructions.
- A requirement for designated construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed.
- A 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 and to advise of alternate routes.
- Measures to ensure access for emergency vehicles to the Project site.
- Maintenance of access to adjacent properties.
- Specification of construction-related vehicle travel and oversize-load haul routes, minimization of construction traffic during the a.m. and p.m. peak hours, distribution of construction traffic flow across alternative routes to access the Project site, and avoidance of residential neighborhoods to the maximum extent feasible.
- A requirement to obtain all necessary permits for the work within the road right-of-way or the use of oversized/overweight vehicles that would use County-maintained roads, which may require escort by the California Highway Patrol or a pilot car. Copies of the approved traffic plan and issued permits shall be submitted to the Fresno County Divisions of Public Works and Planning.
- A requirement that, prior to the Project's Commercial Operation Date (COD), the Applicant will ensure that Sutter Avenue between Jayne Avenue and SR 33 (Lost Hills Road) is repaired utilizing crack seal and chip seal methods. The Applicant will pull required permits for road improvement and crack and chip seal during this time. The full width of all construction entrances shall be grinded to a depth of 0.3 foot and replaced with hot mixed asphalt for the full width of roadway prior to the chip seal application. The Applicant shall pull a no fee encroachment permit from the County of Fresno for maintenance and repair of the roads during the construction phase.

The traffic management plan elements listed above would reduce the potentially significant effects of short-term and intermittent construction-related congestion caused by construction vehicles/equipment on local roadways.

Significance after Mitigation: Less than significant. The traffic management plan elements listed above would reduce the potentially significant effects of construction-related blockage or congestion of SR 33 and other adjacent roads that could substantially delay emergency response or preclude evacuation such that a significant hazard to the public or the environment would result.

Criterion g) Whether the Project would expose people or structure, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Impact 3.10-5: Implementation of the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. ***(Less-than-Significant Impact)***

As discussed in Section 3.10.1.2, *Environmental Setting*, the Project site is located in a high Fire Hazard Severity Zone in a State Responsibility Area. Project construction and decommissioning would involve the use of scrapers, graders, dozers, compaction equipment, and other vehicles and equipment that have the potential to ignite fires. Operation of the energy storage system and transmission lines also have the potential to ignite fires.

The Applicant proposes to construct and operate the facility in accordance with all applicable statutes, regulations, and other requirements, including by developing an emergency action plan in advance of construction to train local emergency response personnel during development and operation of the facility. The plan would be completed in accordance with existing state regulations (Health and Safety Code §25504(b); 19 Cal. Code Regs. §2731; 22 Cal. Code Regs. §66262.34[a][4]). The contents of the emergency action plan would comply with existing state regulations, would be developed in consultation with the fire department and energy storage system supplier, and would include defined roles and responsibilities and training for local first responders.

Project design measures to decrease the risk of fire include maintaining and improving site accessibility to emergency vehicles. Site access points would comply with requirements set forth by CAL FIRE or the Fresno County Fire Protection District to ensure adequate emergency access. During Project O&M, water would be required for emergency fire suppression (stored in tanks on-site). Water required for emergency fire suppression purposes would be stored on-site for use as needed; the storage tanks would have a total capacity of up to 30,000 gallons, or approximately 0.09 acre-foot.

Accordingly, to mitigate potential hazards, redundant separate methods of failure detection would be implemented as part of the ESS. Remote alarms would be installed for operations personnel as well as emergency response teams, including voltage, current, and temperature alarms from the battery management system. Based on selected battery manufacturer capabilities, other protective measures are proposed to include ventilation, overcurrent protection, battery controls to operate the batteries within designated parameters, temperature and humidity controls, smoke detection, and maintenance in accordance with manufacturer guidelines.

Furthermore, the Project would include sheep grazing throughout the Project site. By grazing on the vegetation underneath and surrounding the PV arrays, the sheep would help manage on-site vegetation,

reducing fire fuel loads risk and preventing vegetation from encroaching on sensitive, high-value power-generating equipment and infrastructure. The use of sheep grazing would further reduce fire risk on-site.

The Project site is located in an area of high fire hazard risk and the Project would involve the operation of ESS and transmission lines, Applicant-proposed measures such as the emergency action plan as well as Project design measures such as remote alarms, emergency vehicle access routes, and water for emergency water suppression would be sufficient in reducing fire risk on-site. Impacts would be **less than significant.**

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

Under criterion a), as discussed in Impact 3.10-1, construction of the PG&E infrastructure component would overlap with the ESS construction. The construction and O&M activities and assumptions regarding equipment and materials, particularly hazardous materials, for the solar facility and ESS would be the same as the assumptions for the PG&E infrastructure. Additionally, hazardous materials would be regulated similarly under all Project components. Therefore, the PG&E infrastructure would have a less-than-significant impact with respect to the routine transport, storage, and disposal of hazardous materials.

Under criterion b), and as discussed in Impact 3.10-1, the Project would involve the use, transportation, and disposal of hazardous materials and wastes. The Project would comply with all applicable federal, state, and local requirements and related BMPs.

Accidental spills resulting from construction activities are typically small, localized, and cleaned up in a timely manner. Construction contractors are contractually responsible for their hazardous materials and are required under their contract to store and dispose of these materials properly in compliance with federal and state laws. Implementation of the requirements of HMBPs and the site-specific Stormwater Pollution Prevention Plan would ensure that accidental spills would not adversely affect construction workers or the environment. Compliance with applicable federal, state, and local requirements and implementation of the Applicant's design features would ensure that the Project would not create a significant hazard to the public through the accidental release of hazardous materials.

O&M activities associated with the PG&E infrastructure would require relatively minor use of hazardous materials. Most O&M activities would take place in the new O&M building. Any hazardous materials that would be stored on-site would be contained in designated areas in accordance with an HMBP. 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. Given adherence to all applicable local, state, and federal regulations, construction and operation of the PG&E infrastructure components would have a **less-than-significant impact** related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Regarding criterion c), the PG&E infrastructure would not be located within 0.25 mile of an existing or proposed school, daycare, or hospital or other sensitive receptor; therefore, there would be **no impact** under criterion c). The PG&E infrastructure is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5; therefore, there would be **no impact**

under criterion d). Additionally, the PG&E infrastructure is not located within an airport land use plan or within 2 miles of a public airport or public use airport, so there would be **no impact** under criterion d).

Construction of the PG&E infrastructure components would occur concurrently with construction of the remainder of the Project. Although the construction-related traffic was not assessed separately for the PG&E infrastructure component, the traffic would be expected to be a smaller portion of the overall Project-related traffic, as the switching station would require only 2 acres of the total Project site. To ensure that the Project as a whole would not delay emergency response vehicles or preclude evacuation efforts due to increased construction traffic, implementation of Mitigation Measure 3.10-1 would be required. The traffic management plan would reduce the potentially significant effects of short-term and intermittent construction-related congestion caused by construction vehicles/equipment on local roadways. The construction-related congestion caused by the PG&E infrastructure construction equipment and traffic would therefore not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evaluation plan and cause a **less-than-significant impact** under criterion f).

Finally, while the PG&E infrastructure would be located in an area of high fire hazard risk and would involve the operation of transmission lines, Project design measures such as remote alarms, emergency vehicle access routes, and water for emergency water suppression would be sufficient in reducing fire risk on-site, and impacts would be **less than significant** under criterion g).

3.10.4 Cumulative Analysis

As discussed above, the Project would cause no impact with respect to the emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of a school or hospital; no impact related to location on a site that is included on the Cortese List; and no impact related to location within an airport land use plan or within 2 miles of a public airport or public use airport. Therefore, the Project could not cause or contribute to any cumulative impact related to these considerations. For the remaining hazards and hazardous materials considerations, this section analyzes the potential significance of the cumulative effects of the Project's incremental impact in combination with the incremental impacts of one or more of the cumulative projects identified in Table 3.1-1, *Cumulative Projects List*, discussed in Section 3.1.3.1, *Cumulative Scenario*, and shown in Figure 3.1-1, *Cumulative Projects*.

For Project impacts to combine with the impacts of other projects, the collective incremental impacts must overlap both geographically and temporally, and thus must threaten the same ecosystem, resource, or people. The geographic area affected by the Project and its potential to contribute to cumulative impacts related to hazardous materials encompasses and is limited to the Project site and its immediately adjacent area. This is because hazardous materials impacts are generally site specific and depend on the nature and extent of the hazardous materials release, and on existing and future soil and groundwater conditions. For example, hazardous materials incidents tend to be limited to a smaller and more localized area surrounding the immediate spill location and extent of the release. The time frame during which the Project could contribute to cumulative impacts related to hazards and hazardous materials includes the duration of on-site activities.

Impact 3.10-6: Implementation of the Project would not create a cumulative and significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. ***(Less-than-Significant Impact)***

As described in Section 3.10.3, *Direct and Indirect Effects of the Project,* the Project's incremental impacts regarding the transport, storage, use, and disposal of hazardous materials would be less than significant.

Current and reasonably foreseeable cumulative projects would be required to comply with all applicable federal, state, and local regulatory requirements, including those described in Section 3.10.1.3, *Regulatory Setting*. Based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the relevant geographic area would not cause or contribute to a significant cumulative impact related to the transport, storage, use, and disposal of hazardous materials or reasonably foreseeable upset and accident conditions. In addition, the nearest cumulative project is about 3.5 miles away from the Project site, which is too far away to be able to cause a cumulative impact. Therefore, based on the required compliance with regulatory requirements and the distance from cumulative projects, the Project's incremental contribution to cumulative effects would not be cumulatively considerable and would be **less than significant**.

Mitigation: None required.

Impact 3.10-7: Implementation of the Project would not create a cumulative and significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. ***(Less-than-Significant Impact)***

As described in Section 3.10.3, *Direct and Indirect Effects of the Project*, the Project's incremental impacts regarding the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

Current and reasonably foreseeable cumulative projects would be required to comply with all applicable federal, state, and local regulatory requirements, including those described in Section 3.10.1.3, *Regulatory Setting*. In addition, projects that rely on the use of Battery ESS would involve similar emergency action plans, either as a mitigation measure or as an Applicant-proposed measure. Compliance with legal regulations governing hazards and hazardous materials is effective in minimizing releases where emissions or accidental releases tend to be localized and do not combine to become cumulatively considerable. In addition, the nearest cumulative project is about 3.5 miles away from the Project site, which is too away to be able to cause a cumulative impact. Therefore, based on compliance with these requirements and the distance to cumulative projects, the incremental impacts of the Project combined with impacts of other projects in the relevant geographic area would not cause or contribute to a significant cumulative impact related to reasonably foreseeable upset and accident conditions, and the Project's incremental contribution to cumulative effects would not be cumulatively considerable and would be **less than significant**.

Mitigation: None required.

Impact 3.10-8: The Project would not contribute to cumulative hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile from an existing sensitive receptor. ***(Less-than-Significant Impact)***

The Project is not located near a school, daycare, or hospital. The Project would therefore not have a cumulative impact on schools, daycares, or hospitals.

However, the Project is located next to the unincorporated Lost Hills community, which has been designated as a disadvantaged community, indicating that the Lost Hills community is susceptible to cumulative environmental impacts. The Lost Hills community experiences high levels of cumulative exposure to pesticides, and high instances of environmental effects related to cleanup sites, groundwater threats, and hazardous wastes.

The Project site would not use a cumulatively considerable amount of herbicides, as the Project would include the use of sheep grazing throughout the Project site once it is operational in order to manage on-site vegetation. Herbicides may be used on-site, as discussed in Appendix B.1, I*ntegrated Pest Management Plan.* The *Integrated Pest Management* Plan also includes specifications and recommendations dictating how herbicides are managed and used on-site. These herbicides would also be managed on-site according to the plan and all applicable laws and regulations. As previously discussed, the use of herbicides in California is regulated by the CDPR. Similarly, Projects in the area would be subject to all applicable federal, state, and local regulations.

The Project site is largely undeveloped, with evidence of previous intermittent rangeland and agricultural use. These land uses could have involved the use of pesticides and/or herbicides, which could pose a hazard if concentrated in soils on-site. 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 pesticides or herbicides. Managing dust on-site would prevent cumulative impacts related to pesticide or herbicide exposure for the Lost Hills community. Projects in the area, as outlined in Section 3.1.3.1, *Cumulative Scenario*, would be largely solar projects of similar size and scale. These projects would be subject to similar Fugitive Dust Rules.

Therefore, based on compliance with existing requirements and the distance to cumulative projects, the incremental impacts of the Project combined with impacts of other projects in the relevant geographic area would not cause or contribute to a significant cumulative impact related to being located within 0.25 mile of a sensitive receptor, and the Project's incremental contribution to cumulative effects would not be cumulatively considerable and would be **less than significant.**

Mitigation: None required.

The Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, the Project would not create a significant hazard to the public or the environment. There would be no cumulative impact.

The Project site is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The Project would therefore not result in a cumulative safety hazard or excessive noise for people residing or working on the Project site, and there would be no cumulative impact.

Impact 3.10-9: The Project would not cause or contribute to a significant cumulative hazard due to physical interference with emergency response or emergency evacuation. ***(Less than Significant with Mitigation Incorporated)***

The Project site is located on SR 33. There are no planned road closures as part of Project construction, O&M, or decommissioning. The Project site would be accessible, including to emergency vehicles. Additionally, road improvements as required by the Fresno County Road Maintenance and Operations Division would be implemented prior to the initiation of Project O&M. Implementation of **Mitigation Measure 3.10-1** would ensure that the additional traffic during construction and decommissioning of the Project would not result in significant impacts to an emergency response plan or an emergency evacuation plan.

The Luna Valley Solar Project would also be constructed along SR 33 and could potentially result in similar impacts to emergency response plans and emergency evacuation plans. However, the Luna Valley Solar Project will be completed prior to the commencement of construction for the Project. There would therefore be minimal cumulative impacts on the adopted emergency response plan or emergency evacuation plan. Therefore, the incremental impacts of the Project combined with impacts of other projects in the relevant geographic area would not cause or contribute to a significant cumulative impact related to emergency response or emergency evacuation. The Project's incremental contribution to cumulative effects would not be cumulatively considerable and would be **less than significant with mitigation incorporated**.

Mitigation: Implement Mitigation Measure 3.10-1.

Impact 3.10-10: Implementation of the Project would not expose people or structure, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. ***(Less-than-Significant Impact)***

As discussed in Section 3.10.1.2 *Environmental* Setting, the Project site is located in a high Fire Hazard Severity Zone in a State Responsibility Area. Project construction, O&M, and decommissioning could contribute to the existing fire hazard in the area. The Applicant proposes to construct and operate the facility in accordance with all applicable statutes, regulations, and other requirements, including by developing an emergency action plan in advance of construction to train local emergency response personnel during development and operation of the facility. The plan would be completed in accordance with existing State regulations (Health and Safety Code §25504[b]; 19 Cal. Code Regs. 2731; 22 Cal. Code Regs. 66262.34[a][4]). The contents of the emergency action plan would comply with existing State regulations, would be developed in consultation with the fire department and energy storage system supplier, and would include defined roles and responsibilities and training for local first responders.

Given that the Project proposes to train local first responders, cumulative Project impacts related to increased fire risk would be reduced. Projects with similar equipment would adhere to all local, state, and federal laws, and would also presumably use the most updated equipment. Therefore, the incremental impacts of the Project combined with impacts of other projects in the relevant geographic

area would not cause or contribute to a significant cumulative impact related to wildfires. The Project's incremental contribution to cumulative effects would not be cumulatively considerable and would be **less than significant**.

Mitigation: None required.

3.10.5 References

CAL FIRE (California Department of Forestry and Fire Protection). 2023. Fire Hazard Severity Zones in State Responsibility Area. Available: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed September 5, 2024.

Cal OES (California Governor's Office of Emergency Services). 2017. *State of California Emergency Plan.* October 1, 2017. Available: https://www.caloes.ca.gov/wp-content/uploads/Preparedness/Documents/California_State_Emergency_Plan_2017.pdf. Accessed August 30, 2024.

Cal OES (California Governor's Office of Emergency Services). 2024. 2024 California State Emergency Plan. https://www.caloes.ca.gov/office-of-the-director/operations/planning-preparedness-prevention/planning-preparedness/2024-state-emergency-plan/. Accessed August 30, 2024.

Cameron-Cole. 2023. *Phase I Environmental Site Assessment, Cornucopia Solar Project, Lost Hills Road, Fresno County, California*. Alameda, CA. Prepared for BayWa r.e. Solar Projects LLC and FirstCarbon Solutions, Irvine, CA. September 29, 2023.

DOT (U.S. Department of Transportation). N.d. Health and Safety Concerns of Photovoltaic Solar Panels. Accessed September 3, 2024.

DTSC (California Department of Toxic Substances Control). 2024. EnviroStor. Search term: Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA. Available: https://www.envirostor.dtsc.ca.gov/public/. Accessed August 30, 2024.

FEMA (Federal Emergency Management Agency). 2020. Emerging Hazards of Battery Energy Storage System Fires. Available: https://www.fema.gov/case-study/emerging-hazards-battery-energy-storage-system-fires. Last updated October 27, 2020. Accessed September 11, 2024.

Fresno County. 2017. Solar Facilities Guidelines. Revised by Board of Supervisors on December 12, 2017. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities/photovoltaic-facilities-p-1621. Accessed August 31, 2024.

Fresno County. 2024a. About Fresno County Office of Emergency Services. Available: https://www.fresnocountyca.gov/Departments/Public-Health/Emergency-Services/Office-of-Emergency-Services-OES/About-Fresno-County-Office-of-Emergency-Services. Accessed August 31, 2024.

Fresno County. 2024b. Hazard Mitigation Plan. Available: https://www.fresnocountyca.gov/Resources/Hazard-Mitigation-Plan. Accessed August 31, 2024.

JinkoSolar. 2024. "JinkoSolar's 2000-Volt Module First to Achieve UL Certification." News release. Available: https://www.prnewswire.com/news-releases/jinkosolars-2000-volt-module-first-to-achieve-ul-certification-302150052.html. Accessed September 5, 2024.

State Water Board (State Water Resources Control Board). 2024. GeoTracker. Search term: Sutter Ave & Lost Hills Rd, Coalinga, CA, 93210, USA. Available: https://geotracker.waterboards.ca.gov/. Accessed August 30, 2024.

Trovo, A., G. Marini, W. Zambon, and S. Dambone Sessa. 2023. "Redox Flow Batteries: A Glance at Safety and Regulation Issues." *Electronics* 2023, 12(8):1844. Available: https://doi.org/10.3390/electronics12081844. Accessed September 16, 2024.

U.S. Department of Energy. 2024. *Energy Storage Safety Strategic Plan.* Office of Electricity. April 2024.

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3.11 Hydrology and Water Quality

This section identifies and evaluates issues related to hydrology and water quality. 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 hydrology and water quality (Appendix A, *Scoping Report*).

This analysis is based in part on a Project-specific water supply assessment prepared on the Applicant's behalf (**Appendix J**, *Water Supply Assessment*). The preparers of this Draft EIR independently reviewed the water supply assessment and other materials prepared by or on behalf of the Applicant and determined them to be suitable for reliance, in combination with other materials including in the formal record (e.g., water quality control plans, groundwater sustainability plans [GSPs]), in the preparation of this Draft EIR.

3.11.1 Setting

3.11.1.1 Study Area

As described in *Chapter 2, Project Description,* the Project consists of three main components: a solar photovoltaic facility with 300 megawatts generating capacity (solar facility), an energy storage system (ESS) with 300 megawatts battery storage capacity, and Pacific Gas and Electric Company (PG&E) infrastructure improvements. For the purposes of this hydrology and water quality analysis, the study area relative to surface water consists of the Zapato Chino Creek watershed (10-digit Hydrologic Unit Code 1803001205) within the larger Tulare Lake Hydrologic Region (USGS 2024). The study area for groundwater consists of the Pleasant Valley Subbasin (California Department of Water Resources [DWR] Basin 5-22.10) of the San Joaquin Valley Groundwater Basin (DWR Basin 5-22) (DWR 2006). This study area encompasses the solar facility, ESS, and PG&E infrastructure located in the Pleasant Valley.

3.11.1.2 Environmental Setting

Climate

The study area experiences an inland Mediterranean climate, averaging more than 260 sunny days every year. The Pleasant Valley is characterized by warm, dry summers and cooler winters. The average mean temperature over a 30-year period is 65 degrees Fahrenheit. High daily temperatures in the valley average 95 degrees in the summer. The winter average daily low temperature is 45 degrees (City of Coalinga 2009). Annual average precipitation in the watershed ranges from 6 to 11 inches per year and the precipitation generally falls between October and April.

Surface Water

The study area is in the Tulare Lake Hydrologic Region, an essentially closed basin situated in the topographic horseshoe formed by the Diablo and Temblor ranges to the west, by the San Emigdio and Tehachapi mountains to the south, and by the Sierra Nevada to the east and southeast (Central Valley RWQCB 2018). The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,050 square miles) and includes all of Kings and Tulare counties and most of Fresno and Kern counties. Historically, the valley floor in this region has been a complex series of interconnecting natural sloughs, canals, and marshes. The Tulare Lake region is divided into several hydrologic subareas: the alluvial fans

from the Sierra foothills and the basin subarea (in the vicinity of the Kings, Kaweah, and Tule rivers and their distributaries); the Tulare Lake bed; and the southwestern uplands.

The Project site is located within the Zapato Chino Creek watershed in the Pleasant Valley, a northwest-to-southeast trending alluvial basin **(Figure 3.11-1**). The watershed lies within the larger Tulare–Buena Vista Lakes subwatershed (eight-digit Hydrologic Unit Code 18030012). Drainage in the Pleasant Valley is characterized by ephemeral lakes and streambed basins that are generally dry in the summer and fall. Flows typically dissipate in the San Joaquin Valley but may reach Los Gatos Creek in years of heavy rainfall. Natural streams in the vicinity of the Project site include the perennial Zapato Chino Canyon Creek and the intermittent Canoas and Garza creeks. [1] The Project site is at an elevation of approximately 600 feet above mean sea level and has relatively flat topography.

According to the State Water Resources Control Board's (State Water Board) Electronic Water Rights Information Management Systems (known as "eWRIMS"), there are no surface water right entitlements in the vicinity of the Project site (State Water Board 2024a). Water sources in the study area include imported surface water supplies and groundwater pumped from the Pleasant Valley Subbasin.

Los Gatos Creek, with a segment of 49 miles within Fresno County, is listed on the state Integrated Clean Water Act Sections 303(d) and 305(b) list as impaired[2] for pollutants, including lead and selenium, with sources unknown (State Water Board 2022). Natural streams in the vicinity of the Project site (e.g., Zapato Chino Canyon Creek, Canoas Creek, Garza Creek) are not listed as impaired water bodies.

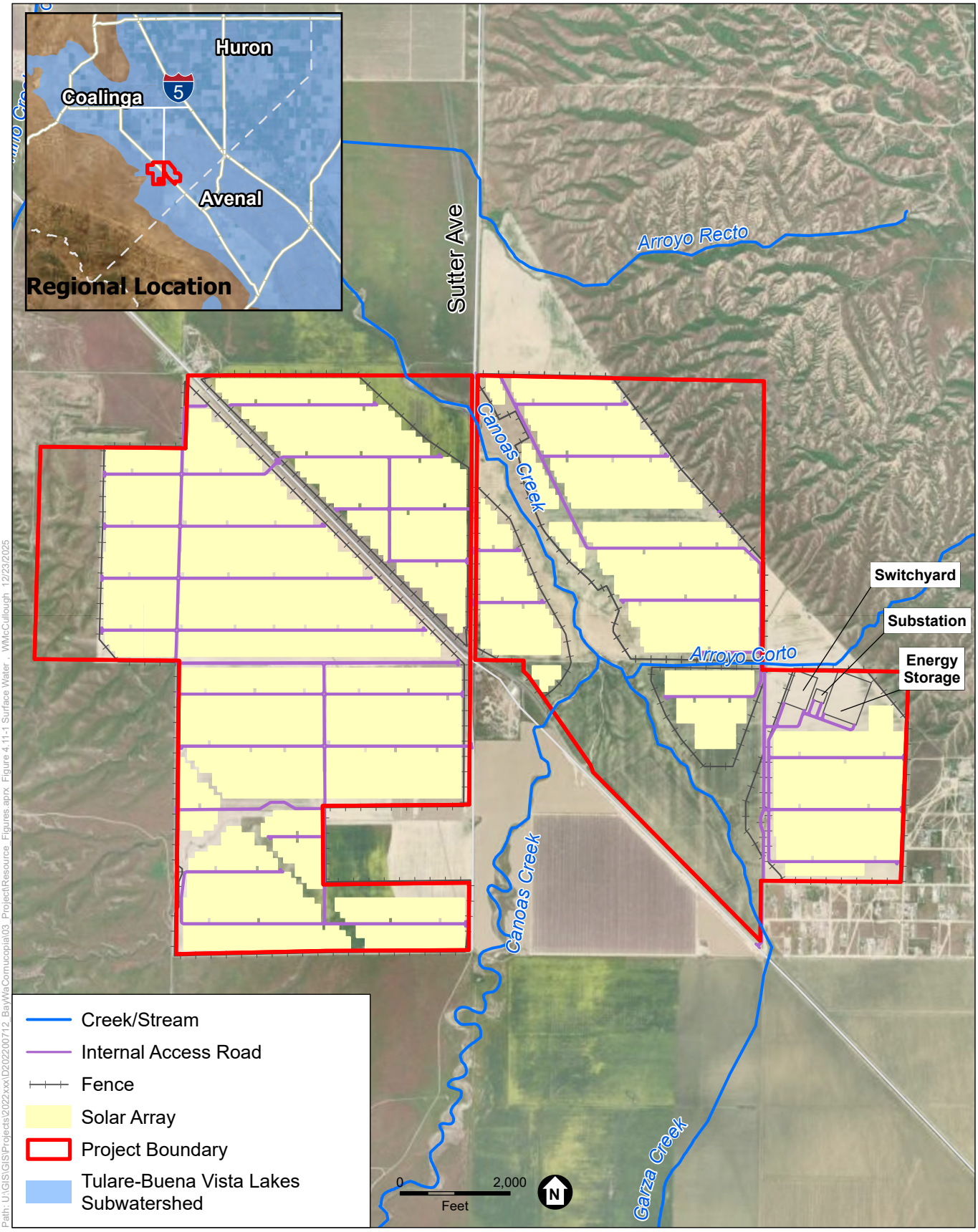
Groundwater

The Project site is within the Pleasant Valley Subbasin (DWR Basin 5-22.10) of the San Joaquin Valley Groundwater Basin (DWR Basin 5-22) (**Figure 3.11-2**), which covers approximately 48,159 acres (75 square miles) in Fresno County. The Pleasant Valley Subbasin lies adjacent to the Westside Subbasin to the east and north of the Kettleman Plain Subbasin, both also within the San Joaquin Valley Groundwater Basin. The subbasin is bounded on the north by the Joaquin Ridge, on the west by the Tertiary and older marine sediments of the Coast Ranges, on the south by the Kettleman Hills and Kings County line, and on the east by the Guijarral Hills and the Westside Subbasin.

The primary sources of inflows (recharge) to groundwater in the Pleasant Valley Subbasin are groundwater inflow, streamflow seepage, and deep percolation from irrigation. The primary outflow is pumping for agricultural irrigation and domestic (municipal and industrial) water use. Other outflows include evapotranspiration of applied water for irrigation, including agriculture and landscaping, and evaporation from surface water features (e.g., reservoirs, recharge basins, conveyance channels). The historical water budget (1998–2010) indicates an average annual decrease in groundwater storage of 15,400 acre-feet (AF) (Pleasant Valley GSA 2024) (see Table 3-7).

[1] An *intermittent stream* flows during certain times of the year, when groundwater provides water for streamflow. During dry periods, intermittent streams may not have flowing water. A *perennial stream* has flowing water year-round during a typical year. An *ephemeral stream* has flowing water only during or for a short duration after precipitation events in a typical year.

[2] An *impaired water* means a water body or water body segment that does not meet its applicable water quality standards due in whole or in part to discharges of pollutants from point or nonpoint sources.

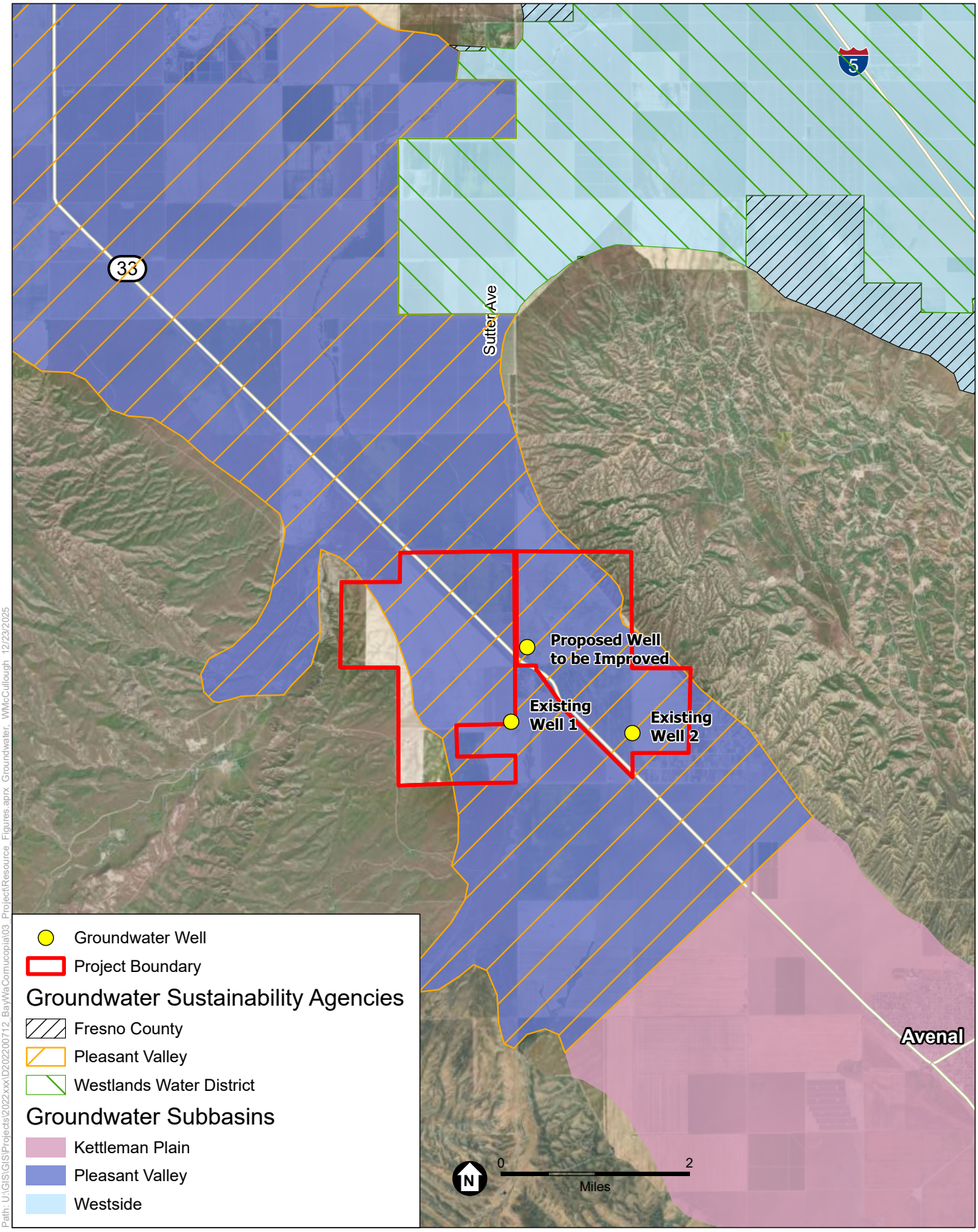


Source: ESA, 2024; DWR, 2020

Cornucopia Hybrid Project

Figure 3.11-1
Surface Water Resources

ESA



Source: ESA, 2024; DWR, 2020

Cornucopia Hybrid Project

Figure 3.11-2
Groundwater Resources

ESA

The current water budget for the Pleasant Valley Subbasin indicates an average annual decrease in groundwater storage of 19,700 AF (Pleasant Valley GSA 2024) (see Table 3-8). The projected water budget for 2042 includes climate change impacts and estimated demand changes, while also incorporating implementation of the projects and management actions described in the Pleasant Valley GSP. The projected water budget for 2042 also indicates an average annual increase in groundwater storage of 400 AF (Pleasant Valley GSA 2024) (see Table 3-10). The Pleasant Valley Water District performs groundwater level monitoring periodically (typically in the spring and fall) at select locations as part of the California Statewide Groundwater Elevation Monitoring Program (Pleasant Valley GSA 2024).

The constituents of concern for groundwater quality in the Pleasant Valley Subbasin include sodium adsorption ratio, bicarbonate, boron, and pH. Concentrations of total dissolved solids range from 1,000 to 3,000 milligrams per liter, with an average concentration of 1,500 milligrams per liter (Pleasant Valley GSA 2024). Overall, groundwater in the Pleasant Valley Subbasin is of poor quality for drinking water, because of conditions resulting from natural processes. However, groundwater is suitable for irrigation of select crops that tolerate salinity, including cotton, hay, and pistachios (Pleasant Valley GSA 2024).

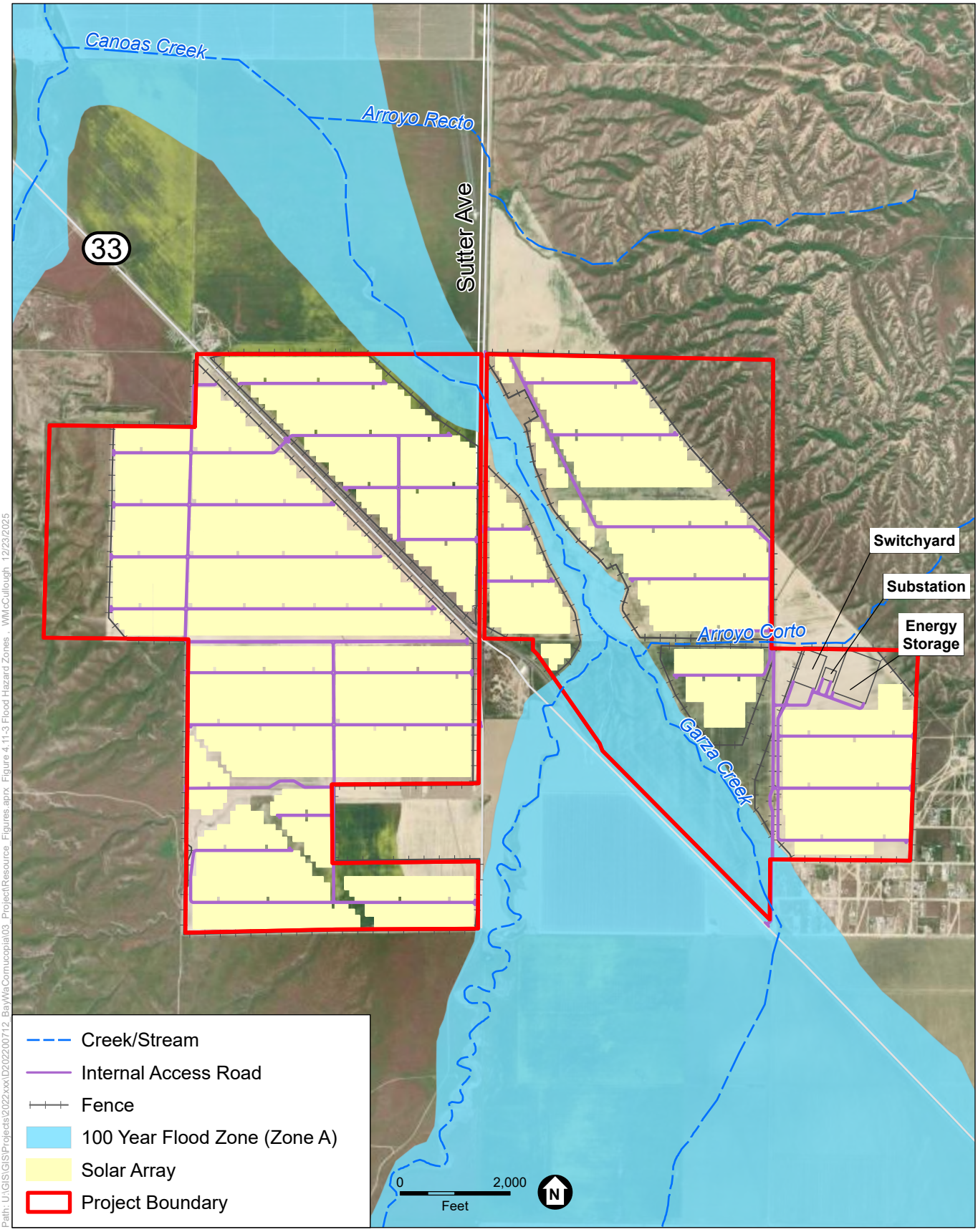
The Pleasant Valley Subbasin was identified as medium priority by DWR. To comply with the Sustainable Groundwater Management Act (SGMA), a GSP was prepared and adopted by the Pleasant Valley Groundwater Sustainability Agency (GSA). The sustainability goal of the Pleasant Valley Subbasin and the GSA is to ensure that by 2042, the Pleasant Valley Subbasin will be managed in a sustainable manner to maintain a reliable water supply for current and future beneficial uses without experiencing undesirable results. See Section 3.11.1.3, *Regulatory Setting*, under *Sustainable Groundwater Management Act,* for additional information.

Flood Potential

Intense and infrequent winter storms can result in significant amounts of surface water runoff in the study area. Flood-producing rainfall typically occurs when rains have saturated the Pleasant Valley, resulting in surging flood flows lasting several days (City of Coalinga 2009). The Federal Emergency Management Agency's (FEMA) flood insurance rate map (FEMA 2024) was reviewed to identify flood hazard zones on the Project site. Most of the Project site is located in an area designated as Zone X, an area determined to be outside the 0.2-percent-annual-chance floodplain and of minimal flood hazard. However, the Project site is transected by Zone A, an area subject to the 1-percent-annual-chance flood (no base flood elevations determined) (**Figure 3.11-3**). Zone A coincides with the natural streams that intersect the Project site. Several temporary (e.g., laydown area) and permanent (e.g., energy storage area, substation, switchyard) Project components are near Zone A (within 2,000 feet) (see Figure 3.11-3).

Tsunami and Seiche Hazards

Tsunamis are ocean waves generated by vertical movement of the sea floor, normally associated with earthquakes or volcanic eruptions. *Seiches* are oscillations of enclosed or semi-enclosed bodies of water that result from seismic events, wind stress, volcanic eruptions, underwater landslides, and local basin reflections of tsunamis. The Project site is not near the ocean or any large water bodies subject to tsunami or seiche hazards.



Path: U:\GIS\GIS\Projects\2022xxx\D202200712_BayWaCornucopia\03_Project\Resource_Figures.aprx Figure 4.11-3 Flood Hazard Zones_WMcCullough 12/23/2025

Source: ESA, 2024; FEMA, 2009

Cornucopia Hybrid Project

Figure 3.11-3
Flood Hazard Zone A

ESA

3.11.1.3 Regulatory Setting

Federal

Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972 are more commonly known as the Clean Water Act. Major changes have been introduced since 1972 in amendatory legislation including the Clean Water Act of 1977 and the Water Quality Act of 1987.

The Clean Water Act is the primary federal law governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point-source and nonpoint-source pollution, helping publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. It is one of the first and most influential modern environmental laws in the United States (USEPA 2024). As with many other major federal environmental statutes, it is administered by the U.S. Environmental Protection Agency (USEPA), in coordination with state governments. Its implementing regulations are codified at Code of Federal Regulations Title 40, Subchapters D, N, and O (Parts 100–140, 401–471, and 501–503).

The Clean Water Act authorizes federal, state, and local entities to cooperatively create comprehensive programs for eliminating or reducing the pollution of state waters and tributaries. Amendments to the Clean Water Act in 1972 established the National Pollutant Discharge Elimination System (NPDES) permit program, which prohibits the discharge of pollutants into the nation’s waters without procurement of a NPDES permit from USEPA. The purpose of the permit is to translate general requirements of the Clean Water Act into specific provisions tailored to the operations of each organization that is discharging pollutants. Although federally mandated, the NPDES permit program is generally administered at the state and regional levels.

The USEPA NPDES program requires NPDES permits for: (1) municipal separate storm sewer systems generally serving or located in incorporated cities with 100,000 or more people (referred to as “municipal permits”); (2) 11 specific categories of industrial activity (including landfills); and (3) construction activity that disturbs 5 acres or more of land. As of March 2003, Phase II of the NPDES Program extended the requirements for NPDES permits to numerous small municipal separate storm sewer systems, construction sites of 1–5 acres, and industrial facilities owned or operated by small municipal separate storm sewer systems, which were previously exempt from permitting.

The following sections discuss specific sections of the Clean Water Act that are relevant to the Project.

Clean Water Act Section 303(d): Congressional Declaration of Goals and Policy

Section 303 of the Clean Water Act (United States Code Title 33, §1251) requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards, to protect those uses for all waters of the United States. Under Section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. *Impaired waters* are waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish a priority ranking for listed waters and develop action plans to improve water quality. This process includes development of total maximum daily loads that set discharge limits for non-point source pollutants (USEPA 2023).

Clean Water Act Section 401: Water Quality Certification

Section 401 of the Clean Water Act requires any applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant into navigable waters, including the crossing of rivers or streams during road, pipeline, or transmission line construction, to obtain a water quality certification (or waiver) from the State in which the discharge originates. Clean Water Act Section 401 is administered by U.S. EPA. In California, Clean Water Act Section 401 authority is delegated to and administered by the State Water Board and water quality certifications are issued by the regional water quality control boards (RWQCBs). Under Section 401 of the Clean Water Act, applicants for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the U.S. must obtain certification or waiver from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. The RWQCBs must issue or waive Section 401 water quality certification for the project to be permitted under Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into water of the United States and imposes project-specific conditions on development. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards.

Clean Water Act Section 402: National Pollutant Discharge Elimination System

Clean Water Act Section 402 (United States Code Title 33, §1341) established the NPDES permit program process. In California, NPDES permitting authority is delegated to, and administered by the nine RWQCBs. Pursuant to Section 402, discharge of any pollutant from a point source into navigable waters is prohibited unless an NPDES permit is obtained. *Point sources* are discrete conveyances such as pipes or human-made ditches. Individual homes that are connected to a municipal system, that use a septic system, or that do not have a surface discharge do not need an NPDES permit; however, the operators of industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. The NPDES permit program is discussed in detail below in the *State* section.

Clean Water Act Section 404: Discharges of Dredged or Fill Material

Dredging and placement of fill materials into the waters of the United States is regulated by Section 404 of the Clean Water Act, which is administered by USACE. For projects that discharge dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 would be needed. The Central Valley RWQCB would review the permit application to ensure that discharge would not violate water quality standards. Compliance with Section 404 of the Clean Water Act requires that the lead federal agency comply with applicable federal environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of ESA and the National Historic Preservation Act have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification has been issued or waived pursuant to Clean Water Act Section 401.

Federal Emergency Management Agency–Related Laws and Regulations

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 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, FEMA

provides information, guidance, and regulation associated with flood prevention, mitigation, and response. Under the provisions of Executive Order 11988, *Floodplain Management* (May 24, 1977), FEMA requires each local government covered by the federal flood insurance program to enact 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 (FEMA 2020).

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.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code Division 7, §13000 et seq.) provides for protection of the quality of waters of the state of California for use and enjoyment by the people of California. The California Legislature has assigned primary responsibility to administer and enforce statutes for the protection and enhancement of water quality to the State Water Board and its nine RWQCBs. The State Water Board provides state-level coordination of the water quality control program by establishing statewide policies and plans for the implementation of federal and state regulations. The RWQCBs adopt and implement water quality control plans throughout California that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. Pursuant to the Clean Water Act's NPDES program, the Porter-Cologne Water Quality Control Act also delegates authority to the RWQCBs to issue NPDES permits.

Waste Discharge Requirements

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are presented in the project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by the Central Valley Water Board. Project involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004).

Water Quality Control Plan–Tulare Lake Subbasin

The Project site is located within the jurisdiction of the Central Valley RWQCB (Region 5). The Central Valley RWQCB is the jurisdiction tasked with implementing the adopted *Water Quality Control Plan for the Tulare Lake Basin* (Basin Plan) through planning, permitting, and enforcement of established water quality objectives (Central Valley RWQCB 2018). In accordance with the 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 (**Table 3.11-1**). The Basin Plan has identified existing

and potential beneficial uses supported by the key surface water drainages throughout its jurisdictional planning area. Multiple other beneficial uses are designated for water resources in the study area, as shown in Table 3.11-1 (Central Valley RWQCB 2018). Each of the beneficial uses listed in Table 3.11-1 are relevant to surface waters in the Project site (State Water Board 2024b).

TABLE 3.11-1
DESIGNATED BENEFICIAL USES OF WATER RESOURCES IN THE STUDY AREA

Water Resource	Designated Beneficial Uses
Pleasant Valley Groundwater Basin	MUN, AGR, IND

Existing and Potential Beneficial Uses Key:

AGR = Agricultural Supply; COLD = Cold Freshwater Habitat; GWR = Groundwater Recharge; IND = Industrial Service Supply; MUN = Municipal and Domestic Supply; PRO = Industrial Process Supply; RARE = Rare Threatened and Endangered Species; REC-1 = Body Contact Recreation; REC-2 = Noncontact Recreation; WARM = Warm Freshwater Habitat; WILD = Wildlife Habitat.

Source: Central Valley RWQCB 2018

National Pollutant Discharge Elimination System Construction General Permit

The NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order WQ 2022-0057-DWQ, NPDES No. CAS000002), commonly referred to as the Construction General Permit, is required for projects that would disturb 1 or more acres of soil during construction. 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 Construction General Permit requires development and implementation of a storm water pollution prevention plan (SWPPP) that would include best management practices (BMPs) to be implemented during construction. These BMPs include stormwater runoff quality control measures (erosion and sediment control), dewatering procedures, concrete waste management, watering for dust control, and good housekeeping measures. The SWPPP would be submitted to the State Water Board via the Stormwater Multiple Application and Report Tracking Systems (known as "SMARTS") and Fresno County for review and approval before the issuance of any building or grading permits.

Sustainable Groundwater Management Act

The SGMA of 2014 (Water Code §10723) provides a framework for sustainable management of groundwater resources. In groundwater basins designated by DWR as medium and high priority, local public agencies and locally controlled GSAs are required to develop and implement GSPs or alternatives to GSPs (i.e., groundwater management plans). Each GSP or alternative must include measurable objectives and interim milestones for achieving sustainability goals for the given groundwater basin. The GSP or alternative must also include a physical description of the basin, including information on groundwater levels, groundwater quality, subsidence and groundwater/surface-water interaction, historical and projected water demand and supply data, and monitoring and management provisions, and a description of how the GSP would affect other plans (DWR 2024a).

As discussed in Section 3.11.1.2, *Environmental Setting,* under *Groundwater*, the Project site overlies the Pleasant Valley Subbasin in the western portion of the San Joaquin Valley Groundwater Basin. Under the SGMA, the Pleasant Valley Subbasin was first ranked as low priority by DWR in 2014, but then was re-

ranked as medium priority by DWR in November 2018. The Pleasant Valley GSA was officially formed by the Pleasant Valley Water District on January 24, 2017, to meet the compliance requirements of California's SGMA legislation.

Three GSAs are responsible for management of the Pleasant Valley Subbasin: the Pleasant Valley GSA, the City of Coalinga GSA, and the Fresno County Pleasant Valley GSA (see Figure 3.11-2). The Pleasant Valley GSA has a memorandum of understanding with the City of Coalinga GSA and Fresno County Pleasant Valley GSA to take the lead in preparing the subbasin-wide GSP, while communicating and collaborating with management of the other two GSAs throughout the development, public review, and implementation phases. In 2022, the Pleasant Valley GSA adopted the GSP prepared in collaboration with Provost & Pritchard Consulting Group and Kenneth D. Schmidt and Associates (Pleasant Valley GSA 2022). The GSP was revised in 2024 (Pleasant Valley GSA 2024) in response to DWR's recommended corrective actions (DWR 2024b).

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state. PG&E's work (as regulated by the commission) would not be subject to the County's water-related requirements. However, the California Public Utilities Commission's General Order No. 131-E, §XI.B, would require PG&E to "consult with local agencies regarding land use matters," potentially including the impact on hydrology and water quality.

Local

Fresno County 2024 General Plan

The following policies related to storm drainage and flood control that are identified in the Public Facilities and Services Element of the Fresno County General Plan (Fresno County 2024) are applicable to the Project:

> ***Policy PF-E.9 100-year Flood Protection:*** The County shall require new development to provide protection from the 100-year flood as a minimum.
>
> ***Policy PF-E.11 Natural Site Drainage Pattern:*** The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.
>
> ***Policy PF-E.13 Natural Storm Water Drainage Systems:*** The County shall encourage the use of natural storm water drainage systems to preserve and enhance natural drainage features.
>
> ***Policy PF-E.14 Retention-Recharge Basins:*** 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.15 Basin Landscaping and Open Space:*** The County should require that retention-recharge basins be suitably landscaped to complement adjacent areas and should, wherever possible, we made available to the community to augment open space and recreation needs.
>
> ***Policy PF-E.16 Minimal Sedimentation and Erosion:*** The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of

roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

Policy PF-E.17 Groundwater Recharge: The County shall encourage the local agencies responsible for flood control or storm drainage retention-recharge basins located in soil strata strongly conducive to groundwater recharge to develop and operate those basins in such a way as to facilitate year-round groundwater recharge.

Policy PF-E.20 Storm Water Drainage Discharges: The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.

Policy PF-E.21 Best Management Practices: 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.

The following policies identified in the Open Space and Conservation Element of the Fresno County General Plan (Fresno County 2024) are applicable to the Project:

Water Resources

Policy OS-A.5 Groundwater Recharge: The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater.

Policy OS-A.6 Groundwater Recharge Protection: The County shall ensure that development does not limit the capacity or function of groundwater recharge areas.

Policy OS-A.10 Sustainable Groundwater Management: The County shall coordinate with the relevant Groundwater Sustainability Agency(ies) concerning their Groundwater Sustainability Plan(s) and refer any substantial proposed General Plan amendment to the agency for review and comment prior to adoption. The County shall give consideration to the adopted groundwater sustainability plan when determining the adequacy of water supply.

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

Policy OS-A.18 Groundwater Quality Protection: 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.19 Water Discharge Pollution: The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigation any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.

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

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

Policy OS-A.22 Water Quality Monitoring: The County shall support the monitoring of water quality and necessary measures to prevent contamination, including the prevention of hazardous materials from entering the wastewater system.

Policy OS-A.24 Low Risk for Groundwater Degradation: In areas with increased potential for groundwater degradation (e.g., areas with prime percolation capabilities, coarse soils, and/or shallow groundwater), the County shall only approve land uses with low risk of degrading groundwater.

Wetland and Riparian Areas

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

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, Water Conservation,** pertains to water conservation to conserve and properly utilize the limited available water supplies of the county by preventing the unreasonable use of county water supplies and regulates the use of water services and facilities.
- **Chapter 14.03, Groundwater Management,** pertains to groundwater management by establishing a policy prohibiting the direct or indirect transfer of groundwater outside of Fresno County, and protecting the county's groundwater resources.
- **Chapter 14.04, Well Regulations–General Provisions,** 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.
- **Chapter 14.24, Regulation of Stormwater Discharges,** prohibit the commencement, conduct or continuance of illicit discharges to the storm drain system within the county and to the waters of the

United States, to prohibit illicit connections to the storm drain system, and to establish waste disposal prohibitions, in order to prevent pollution, as required by the municipal NPDES stormwater discharge permit ("permit"), issued pursuant to the Clean Water Act. This ordinance authorizes the county to adopt and impose best management practices; to require remediation, monitoring and analysis of discharges; establishes a requirement to notify authorities of releases; and authorizes county's access, inspection, sampling, installation or establishment of sampling devices, and testing.

3.11.2 Significance Criteria

The Project would result in a significant impact related to hydrology and water quality if it would do any of the following:

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.

3.11.3 Direct and Indirect Effects

3.11.3.1 Applicant-Proposed Measures and Design Features

The Project includes certain actions to reduce the potential significance of initially anticipated environmental impacts related to a variety of resource areas, including hydrology and water quality. The full list of actions is provided in Chapter 2, Section 2.9, *Applicant-Proposed Measures and Design Features*. Of these, the actions described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention*, are relevant to the analysis below.

In addition, the following Project design features would minimize impacts on water quality:

- No exterior wash-down areas are proposed.
- No on-site repair or maintenance bays or fueling areas are proposed.

- Pest management would occur as described in Section 2.9.9, *Pest Management*.
- Water quality controls would be maintained on an ongoing basis and periodic inspections would be conducted to ensure proper performance.

Project construction would result in more than 1 acre of soil disturbance. As a result, the Applicant would prepare, file, and implement a SWPPP in accordance with the Construction General Permit. The SWPPP would include measures to limit erosion and off-site transport of pollutants from construction activities. The SWPPP designates BMPs that would be followed during construction to help stabilize disturbed areas and reduce erosion, sedimentation, and pollutant transport. Relevant measures and BMPs would include dust control, erosion control blankets, mulching, fiber rolls, silt fencing, and overall good housekeeping and materials management (USEPA 2025).

3.11.3.2 Methodology

The following impact analysis considers the potential impacts on hydrology and water quality associated with the Project's construction (short-term, temporary), operation and maintenance (O&M) (long-term, permanent), and decommissioning (short-term, temporary) phases. This analysis assumes Project compliance with applicable federal, state, and local laws and regulations and implementation of the other identified Applicant-proposed measures. Further, state and local agencies are expected to continue to enforce applicable requirements to the extent that they do now. The analysis considers the potential direct, indirect, and cumulative impacts on hydrology and water quality and any mitigation measures that would be implemented to avoid or minimize such impacts, as appropriate. This analysis assumes that the Project as described in Chapter 2, *Project Description*, would be implemented and that the Project would comply with all regulatory requirements with respect to water quality.

3.11.3.3 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Criterion a) Whether the Project would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Impact 3.11-1: The Project could violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. (*Less-than-Significant Impact*)

The Project site is in the Tulare Lake Basin, which is under the water quality jurisdiction of the Central Valley RWQCB. The Project site is in the Zapato Chino Creek watershed in the vicinity of both perennial and intermittent streams. As noted in Section 3.11.1.2, *Environmental Setting,* under *Surface Water*, Los Gatos Creek, with a segment of 49 miles within Fresno County, is listed on the state Integrated Clean Water Act Sections 303(d) and 305(b) list as impaired[3] for pollutants, including lead and selenium, with sources unknown (State Water Board 2022). Other streams in the vicinity of the Project site, including Zapato Chino Creek, are not listed as impaired water bodies. A significant impact could occur if Project

[3] An *impaired water* means a water body or water body segment that does not meet its applicable water quality standards due in whole or in part to discharges of pollutants from point or nonpoint sources.

construction, operation, maintenance, or decommissioning activities would result in a water quality violation or substantially degrade surface water or groundwater quality.

Construction and Decommissioning

As described in Section 2.6, *Construction*, of Chapter 2, *Project Description*, minimal site grading would occur to prepare the Project site for construction of the solar facility and ESS. Construction of the substation would require trenching, excavation, grading, backfill, compaction, and leveling. Construction of the ESS would require preparation of foundations using concrete pads or piers, followed by excavation, grading, and concrete pouring. As presented in Table 2-2, ground disturbance for construction of the solar facility and ESS project components would be approximately 461 acres of the approximately 2,446-acre site. A preliminary site plan displaying Project components is presented in Figure 2-3. The Project site would be revegetated with native grasses and pollinator species, and sheep would graze throughout the Project site to help manage on-site vegetation, reduce fire fuel loads, and prevent vegetation from encroaching on Project equipment and infrastructure.

As described in Section 2.5.1.4, *Other Facilities and Infrastructure*, telecommunication lines would be trenched approximately 3–4 feet deep and 2–3 feet wide, as applicable, to support telecommunications activities at the O&M buildings. If required, the trenches would be filled with base materials above and below the conductors and communication lines to ensure adequate thermal conductivity and electrical installation characteristics. The topsoil from trench excavation would be stockpiled adjacent to the trench for use as backfill and would ultimately compose the uppermost layer of the trench. Excess material from the foundation and trench excavations would be used for site leveling. Where possible, trenching would be located beneath driveways and roads to minimize disturbance.

Decommissioning activities (e.g., removal of all aboveground and belowground structures deemed unnecessary by the public utility company) are assumed to be identical to the soil disturbance associated with construction. As described in Section 2.8, *Decommissioning and Site Reclamation,* the Project site would be restored to a condition comparable to that before construction. A County-approved solar reclamation plan has been drafted (see Appendix B.2). With the proposed site alteration and soil-disturbing activities during construction and decommissioning, in the absence of measures to prevent contamination, sediment and other pollutants could be mobilized and transported off-site through runoff, which could result in impacts on surface water or groundwater quality.

As described in Section 2.5.2.3, *Stormwater,* temporary erosion sediment basins would be placed at the downstream end of the drainage area before water leaves the Project site and would be maintained during construction. As described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* Applicant-proposed measures are proposed for inclusion in the Project to reduce the potential for erosion and limit the mobilization of pollutants off-site through runoff during construction. These measures include minimization of soil disturbance where feasible, use of water-based dust suppression or appropriate soil stabilizers on Project roads during construction and decommissioning activities, stabilization of soil piles, use of dust suppression measures, and suspension of work during high winds. In addition, the Project does not include exterior wash-down areas and on-site repair or maintenance bays or fueling areas.

As also described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* because Project construction would disturb more than 1 acre of soil, the Applicant would prepare, file, and implement a SWPPP in accordance with the Construction General Permit. The SWPPP would include measures to limit erosion and the off-site transport of pollutants from construction activities. The SWPPP would designate BMPs that would be followed during construction including erosion control, sediment control, waste management, and good housekeeping. These BMPs are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, and equipment and fuel storage; identify protocols for responding immediately to spills; and describe BMPs for controlling site runoff. Compliance with this regulation would prevent sediment and other pollutants from being discharged from the Project site and entering waterways or groundwater.

As discussed in Section 3.10, *Hazards and Hazardous Materials,* construction activities would be required to comply with numerous hazardous materials regulations described in Section 3.10.1.3, *Regulatory Framework.* Activities would be designed to ensure that hazardous materials would be transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies. Contractors would be required to prepare and implement hazardous materials business plans requiring that hazardous materials used for construction be used properly and stored in appropriate containers with secondary containment to contain a potential release. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

Operation and Maintenance

During O&M of the solar facility and ESS, stormwater falling on the Project site could run off and cause erosion and degrade water quality. As described in Section 2.5.2.3, *Stormwater*, the Project may include on-site detention or retention basins that would serve to retain stormwater runoff and not result in an increase in off-site drainage. The Project site would include permanent on-site detention ponds, or basins, at the downstream end of the drainage area before water leaves the Project site. These detention ponds would slow and control the rate of runoff during storm events, collect stormwater runoff, and facilitate the infiltration of stormwater into the water table. Additionally, construction of Project design features[4] would control site runoff and prevent it from degrading water quality through the release of sediment or other pollutants from the Project site during O&M. The detention basins would be expected to remain dry except during or immediately after a rain event.

As described in Section 3.10, *Hazards and Hazardous Materials,* Project O&M activities would require relatively minor use of hazardous materials (e.g., lithium-ion batteries). Any hazardous materials that would be stored on-site would be contained in designated areas in accordance with a hazardous materials

[4] As described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention*, other Project design features to minimize impacts on water quality include the following: No exterior wash-down areas are proposed; no on-site repair or maintenance bays or fueling areas are proposed; pest management would occur as described in Section 2.9.9, Pest Management; and water quality controls would be maintained on an ongoing basis and periodic inspections would be conducted to ensure proper performance.

business plan 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.

Impact Conclusion

Compliance with the Applicant-proposed measures, permit conditions, and regulatory requirements would ensure the protection of water quality such that Project construction, O&M, and decommissioning (in the case of the solar facility and ESS) would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore, this impact would be 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 3.11-2: The Project could 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*)

The Project site overlies the Pleasant Valley Subbasin, ranked as a medium-priority basin by DWR (Pleasant Valley GSA 2024). The Project site has two former water supply wells (see the existing well locations in Figure 3.11-2). As described in Section 2.3.1, *On-Site Land Uses,* in Chapter 2, *Project Description*, the well located at the intersection of Sutter Avenue and State Route 33 may be improved to provide water for the Project (see the proposed well location in Figure 3.11-2). Groundwater pumping could substantially decrease groundwater supplies, or the addition of impervious surfaces could interfere with groundwater recharge; either action would reduce the availability of groundwater supplies to users of groundwater within the subbasin and impede the sustainable groundwater management of the basin.

Construction, Operation and Maintenance, and Decommissioning

As summarized in Impact 3.11-1, construction of the solar facility and ESS would require minimal grading to prepare the Project site with temporary disturbance areas on-site. Specifically, construction of the substation would require trenching, excavation, grading, backfill, compaction, and leveling. Construction of the ESS would require preparation of foundations using concrete pads or piers, followed by excavation, grading, and concrete pouring. New impervious surface areas would be introduced (e.g., ESS yard). A preliminary site plan that displays Project components is presented in Figure 2-3. Decommissioning activities would return the Project site to a condition comparable to that before construction.

As detailed in Appendix J, *Water Supply Assessment and Update,* the Project would introduce a new use of groundwater from the Pleasant Valley Subbasin. As described in Section 2.5.2.1, *Water,* in Chapter 2, *Project Description*, the Project would require water for construction (e.g., dust suppression during grading and other ground disturbance to prepare the site), O&M (e.g., emergency fire suppression, solar panel cleaning, soil conditioning, and sheep grazing), and decommissioning (e.g., dust suppression and earthwork).

Table 3.11-2 presents estimated groundwater demand for Project construction, O&M, and decommissioning. The Project's water demands would total approximately 1,080 AF over the 2-year construction period and 1,084 AF over the 35 years of operation. The water supply assessment did not provide an estimate for water demand for decommissioning. However, as stated in Section 2.5.1.4, *Other Facilities and Infrastructure*, in Chapter 2, the decommissioning water use would be comparable to the construction-related water use, or approximately 540 AF over the 1-year decommissioning period.

TABLE 3.11-2
GROUNDWATER DEMAND FOR THE PROJECT

Solar Facility and ESS	Water Demand (acre-feet per year)	Duration (years)	Water Demand (acre-feet)
Construction	540	2	1,080
Operation and Maintenance	30.97	35	1,084
Decommissioning	540	1	540
Total	**--**	**38**	**2,704**

NOTE: ESS = energy storage system

SOURCE: Data compiled by Environmental Science Associates in 2024 (see Chapter 2, *Project Description*, and Appendix J, *Water Supply Assessment and Update*)

Although some Project water demands (e.g., fire and emergency management purposes) would be met on-site with 30,000-gallon aboveground water tanks, additional Project water demands (e.g., construction dust control, operational water use) would be fulfilled by improvements to an existing well at the intersection of Sutter Avenue and State Route 33 (see proposed well location in Figure 3.11-2). Water for employees would be bottled and brought to the site. For conservative water supply planning purposes, this impact analysis assumes that all Project water demand would be sourced from groundwater pumped from the underlying Pleasant Valley Subbasin.

As described in Section 2.3.1, *On-Site Land Uses*, in Chapter 2, *Project Description*, the Project site is used for dry-farmed (unirrigated) agricultural product of wheat and grazing fodder. However, the Pleasant Valley Subbasin GSP generally assumes that field crops and grains use flood/furrow or sprinkler irrigation and thus receive applied water (Pleasant Valley GSA 2024: 3-86). The Pleasant Valley Subbasin GSP states that on average, approximately 23,700 AF per year of water is applied for agricultural crops across the subbasin (Pleasant Valley GSA 2024: 3-86). The Project-specific water supply assessment (Appendix J) used the 2022 Pleasant Valley GSP to estimate the amount of water accounted for in the Pleasant Valley GSP for agricultural irrigation on the Project site (see Appendix J, pages 2 and 24). The estimates presented in the Project-specific water supply assessment were revised to reflect the updated values presented in the revised Pleasant Valley Subbasin GSP (Pleasant Valley GSA 2024). Applying an average applied water rate of 1.38 AF per year to the 809 acres classified as grain and hay crops within the Project site indicates that the GSP accounts for approximately 1,113 AF per year.

Over the 38-year lifetime of the project (2 years of construction, 35 years of operation, and 1 year of decommissioning), the Project would require an average of 64 AF of water per year. In comparison with water use assumed in the GSP for existing land uses (1,113 AF per year for irrigation of hay and grain crops), the Project's water demand represents a small portion (approximately 6 percent) of annual water use under existing conditions accounted for in the GSP. If considering only water demand for operation

(approximately 31 AF per year), this equates to less than 3 percent of annual water use accounted for in the GSP. Therefore, development of the Project would use significantly less water than assumed to be used on the Project site in the GSP , potentially accelerating sustainable groundwater conditions in the Pleasant Valley Subbasin.

The Project would alter conditions for groundwater recharge in the Pleasant Valley Subbasin, designated by DWR as medium priority. Construction of several Project components would add impervious surface to the Project site. As indicated in Table 2-2 in Chapter 2, *Project Description*, approximately 13 acres of disturbance would occur for construction of the solar facility substation, the foundations to support the ESS and ESS yard, the O&M building, and the control services building. The approximately 448 acres of solar panel array would be installed on steel piles or concrete foundations. Although grading and other long-term disturbance in the panel arrays would affect direct recharge, rainfall would run off the panels, eventually resulting in infiltration into the groundwater system adjacent to the solar arrays.

The Project would add impervious surface on the site, which could affect the Pleasant Valley Subbasin's overall groundwater recharge area compared to existing conditions; however, stormwater falling on impervious surfaces would flow into detention ponds, as described in Section 2.5.2.3, *Stormwater,* of Chapter 2 and shown on the preliminary site plan in Figure 2-3. Detention ponds would be located at the downstream end of the drainage area and would collect and control stormwater flow and direct the flow to detention basins that would facilitate infiltration of stormwater into the groundwater table, thus ensuring significant impacts on groundwater recharge do not occur.

Impact Conclusion

The Project's proposed use of groundwater for construction, O&M, and decommissioning would increase groundwater use on the Project site compared to existing conditions but will still result in significantly less groundwater use on the site than is accounted for in the Pleasant Valley GSP, thus ensuring the Project would not substantially decrease groundwater supplies in the basin. Because stormwater runoff would be routed to detention ponds, the additional impervious surface would not result in a measurable change in groundwater recharge capability across the site and at the subbasin scale. Therefore, the Project's impacts relative to groundwater supply and recharge would be less than significant.

Mitigation: None required.

Criteria 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 off-site; 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 3.11-3: 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 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 off-site; (iii) create 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) impede or redirect flood flows. (*Less-than-Significant Impact*)

The Project would result in the construction of a solar facility and ESS that would include grading, the construction and use of erosion control sediment basins and detention basins, and the addition of impervious area (e.g., ESS yard). These activities could change the drainage patterns of the Project site and could lead to erosion, siltation, increased runoff, and issues with flooding and flood flows.

Erosion and Siltation

The Project is proposed on eight parcels of agricultural land that are relatively flat and intersect perennial and intermittent creeks, as described in Section 3.11.1.2, *Environmental Setting,* under *Surface Water.* Site alteration would take place during construction, operation, and decommissioning. Minimal site grading would be required for preparation of the Project site. Construction of the substation would involve trenching, excavation, grading, backfilling, compaction, and leveling. Construction of the ESS would require preparation of foundations using concrete pads or piers, followed by excavation, grading, and concrete pouring. As presented in Table 2-2, ground disturbance during construction of the solar facility and ESS project components would be approximately 461 acres of the approximately 2,446-acre site. Implementation of the BMPs required for the previously discussed SWPPP would prevent erosion and siltation during construction. Construction and operation of the detention basins would prevent erosion and siltation during O&M activities by capturing stormwater runoff. Decommissioning and reclamation of the Project site would return the site to a condition comparable to that before construction. Given the site's relatively flat topography, erosion during construction and decommissioning is unlikely to be substantial. Therefore, impacts related to erosion and siltation would be less than significant.

On-Site or Off-Site Flooding, or Impedance of Flood Flows

Though the Project would be avoiding construction in flood zones, site grading and other ground-disturbing construction work would alter drainage patterns and could result in on-site or off-site flooding if stormwater is not properly controlled. In addition, the Project would add impervious surfaces such as the ESS yard, which could reduce infiltration and increase flooding. As discussed above, implementing the BMPs required for the SWPPP would prevent flooding during construction through the use of temporary sediment basins. Temporary sediment basins and permanent detention basins to manage stormwater would also capture runoff and infiltrate stormwater into the subsurface, preventing substantial flooding-related impacts. The basins would be sized based on the drainage areas as determined by the Civil Engineer of Record to ensure post-development offsite flows are not increased relative to existing conditions. The decommissioning and reclamation of the Project site would return the site to a condition comparable to that before construction, where flood risks are generally minimal (see Impact 3.11-4 for additional details). Therefore, impacts related to flooding would be less than significant.

Planned Stormwater Drainage System

No stormwater drainage system currently serves the Project site; therefore, the Project would construct its own stormwater system to manage stormwater flows during and after storm events. As discussed above,

temporary sediment basins and permanent detention ponds would be constructed to manage stormwater. These stormwater facilities are assumed to be designed and constructed to retain stormwater during a 100-year, 48-hour rain event consistent with state, regional, and Fresno County requirements. Such detention basins would be dry except during or immediately after a storm event. Because a stormwater drainage system does not currently serve the Project area, it would not be affected by the Project, resulting in no impact.

Additional Sources of Polluted Runoff

As discussed above, stormwater would be managed, captured, and/or infiltrated during Project construction, operation, and maintenance through a site-specific stormwater system. As also described above, and detailed in Section 3.10, *Hazards and Hazardous Materials*, any hazardous materials used during construction, operation, maintenance, and decommissioning would be stored, used, and disposed of properly. Decommissioning and reclamation of the Project site would return the site to a condition comparable to that before construction and no additional sources of polluted runoff would be created. Therefore, impacts related to additional sources of polluted runoff would be less than significant.

Impact Conclusion

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 that would result in substantial erosion or siltation; increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, impede or redirect flood flows, or provide substantial additional sources of polluted runoff. No existing stormwater drainage system serves the Project site; therefore, no stormwater drainage system would be affected by the Project. The Project includes a stormwater system to manage, capture, and infiltrate stormwater into the water table. Therefore, the Project's impacts under this criterion would be less than significant.

Mitigation: None required.

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.

Impact 3.11-4: The Project could risk the release of pollutants due to project inundation, due to being located in a flood hazard, tsunami, or seiche zone. (*Less-than-Significant Impact*)

As described in Section 3.11.1.2, *Environmental Setting*, the study area is not located in a zone designated for tsunami or seiche hazards. The Project site is in an area designated as Zone X, an area of minimal flood hazard, and as Zone A, an area subject to the 1-percent-annual-chance flood (FEMA 2020). Several temporary and permanent Project components (e.g., temporary laydown area; energy storage area, substation, switchyard) are close to Zone A (within 2,000 feet; see Figure 3.11-3). In the event a 100-year flood occurs, the Project could risk the release of pollutants due to being located near a flood hazard zone.

Construction, Operation and Maintenance, and Decommissioning

Construction of the Project would require the use of pollutants. As described in Section 2.5.2.6, *Hazardous Waste and Hazardous Materials,* in Chapter 2, *Project Description*, a state-licensed pesticide applicator may apply pre-emergent herbicides while the Project site is being prepared for construction.

Construction would generate limited amounts of hazardous wastes, such as lubricants, cleaning solvents, and other chemicals. Additional hazardous waste could be encountered or released during construction. Hazardous materials and waste generated or encountered would be handled, contained, transported, and disposed of according to federal, state, and local regulations. Construction equipment would require fuels and lubricants. Supplies and materials necessary for construction would be stored outdoors in an on-site laydown yard or staged around the construction area.

Project O&M would require on-site storage of liquids such as transformer oil, maintenance fuels (e.g., gasoline for a lawn mower), and cooling liquid for ESS battery units. Most O&M activities would take place in the new O&M building. As described in Section 3.10, *Hazards and Hazardous Materials*, any hazardous materials that would be stored on-site would be contained in designated areas in accordance with a Hazardous Materials Business Plan (HMBP). Therefore, all materials would be stored properly in the O&M building and protected from flooding. Once the solar facility is no longer operational, but before equipment structure demolition, all liquids on-site would be removed. The O&M building would be emptied of all materials before the unit would be hauled off-site.

As described in Section 2.5.2.3, *Stormwater,* in Chapter 2, *Project Description,* temporary erosion sediment basins would be placed at the downstream end of the drainage area before water leaves the Project site and would be maintained during construction. The Project would also include on-site detention ponds that would retain stormwater runoff and would slow and control the rate of runoff during storms. As described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* in Chapter 2, *Project Description,* Applicant-proposed measures are proposed for inclusion as part of the Project to reduce the potential for erosion and limit the mobilization of pollutants off-site through runoff during construction. These measures include minimizing soil disturbance where feasible; using water-based dust suppression or appropriate soil stabilizers on Project roads during construction and decommissioning activities; stabilizing soil piles; implementing dust suppression measures; and suspending work during high winds. In addition, the Project does not include exterior wash-down areas and on-site repair or maintenance bays or fueling areas.

In addition, as described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* because Project construction would disturb more than 1 acre of soil, the Applicant would prepare, file, and implement a SWPPP in accordance with the Construction General Permit. The SWPPP would include measures to limit erosion and off-site transport of pollutants from construction activities. The SWPPP identifies BMPs that must be adhered to during construction, including erosion control, sediment control, waste management, and good housekeeping. These BMPs are intended to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off-site from the construction area. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, and equipment and fuel storage; identify protocols for responding immediately to spills; and describe BMPs for controlling site runoff.

Summary

Compliance with the Applicant-proposed measures, including the Construction General Permit that requires a SWPPP and site-specific BMPs, would help ensure that pollutants associated with construction

equipment and activities are managed properly and releases during a flood event are avoided to the extent possible. Therefore, this impact would be less than significant.

Mitigation: None required.

Criterion e) Whether the Project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact 3.11-5: The Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (*Less-than-Significant Impact)*

The Project, including the solar facility and ESS, would be regulated under the water quality control plan for the Tulare Lake Basin (the Basin Plan) as well as the Pleasant Valley Subbasin GSP.

As described in Impact 3.11-1, the Project would include site alteration and soil-disturbing activities during construction and decommissioning. As described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* in Chapter 2, *Project Description,* because Project construction would disturb more than 1 acre of soil, the Applicant would implement BMPs as part of a SWPPP, as required by the Construction General Permit. Additionally, the Project would be subject to the post-construction requirements of the NPDES Construction General Permit, which requires restoring and maintaining pre-Project drainage patterns if stormwater has the potential to discharge to designated waters of the United States. Complying with the requirements of the Construction General Permit and constructing Project design features would control site runoff and prevent it from degrading water quality through the release of sediment or other pollutants from the Project site during O&M activities. Therefore, the Project would not result in conflicts with or obstruction of the Basin Plan.

As described in Impact 3.11-2, the Project's proposed use of groundwater for construction, O&M, and decommissioning would result in a result in significantly less groundwater use on the site than is accounted for in the Pleasant Valley GSP (approximately 5 percent of annual water use accounted for in the Pleasant Valley GSP), potentially accelerating sustainable groundwater conditions in the Pleasant Valley Subbasin. The Project would add impervious surfaces on the Project site; however, stormwater falling on impervious surfaces would flow into detention ponds that would facilitate infiltration of stormwater into the water table. Therefore, the Project would not result in conflicts or obstruction with the Pleasant Valley Subbasin GSP.

Summary

The Project would not conflict with or obstruct implementation of a water quality control plan (the Basin Plan) or sustainable groundwater management plan (the Pleasant Valley Subbasin GSP). Therefore, impacts would be less than significant.

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

Related to criterion a), and as described in Section 2.10, *PG&E Infrastructure*, of Chapter 2, *Project Description*, to accommodate the solar facility and ESS, PG&E would construct a high-voltage 230-kilovolt (kV) switching station in the southeast corner of the Project site (see Figure 2-3), located directly

adjacent to the Project substation. The switching station footprint would be approximately 2 acres. The substation would connect to PG&E's switching station by a new generation-tie (gen-tie) line up to 200 feet in length. The 230 kV switching station would then connect to PG&E's existing 230 kV transmission line located directly adjacent to the switching station. No poles for the gen-tie route are expected other than the two take-off structures located inside the switchyard. One additional pole may be required for the gen-tie route in the unlikely event that PG&E changes the configuration of the switchyard.

Construction of the PG&E infrastructure across the 2-acre footprint would require ground disturbance similar to that required for the other Project components (e.g., solar facility and ESS). As described in Section 2.5.2.3, *Stormwater,* in Chapter 2, *Project Description,* temporary erosion sediment basins would be placed at the downstream end of the drainage area before water leaves the Project site and would be maintained during construction. As described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* Applicant-proposed measures are included as part of the Project to reduce the potential for erosion and limit the mobilization of pollutants off-site through runoff during construction. Because Project construction would disturb more than 1 acre of soil, the Applicant would prepare, file, and implement a SWPPP and designate BMPs in accordance with the Construction General Permit. The SWPPP would apply to construction of the PG&E infrastructure. The hazardous materials business plans would also cover any additional hazardous materials used for construction of the PG&E infrastructure.

The substation would connect to PG&E's switching station by a new gen-tie line and would connect to PG&E's existing 230 kV transmission line located directly adjacent to the switching station. Stormwater falling on the footprint of the switching station could runoff and cause erosion.

As described in Section 2.5.2.3, *Stormwater,* of Chapter 2, to meet County requirements that no increase in off-site drainage occur, the Project site would include permanent on-site detention ponds that would retain stormwater runoff. The detention ponds would be located at the downstream end of the drainage area before water leaves the Project site. Given the proximity of the PG&E infrastructure to the solar facility and ESS, the permanent on-site detention basins would also collect and control stormwater flow, direct the flow to detention basins that would facilitate infiltration of stormwater into the water table, and slow and control the rate of runoff during storm events. For these reasons, the PG&E infrastructure would have a less-than-significant impact under criterion a).

Related to criterion b), as summarized in Impact 3.11-1, construction of the PG&E infrastructure would require construction activities and disturbance similar to those required for the solar facility and ESS on an approximately 2-acre footprint. O&M of the PG&E infrastructure would be minimal. The Project-specific water supply assessment (Appendix J) did not provide a separate estimate for water use for the PG&E infrastructure. However, any groundwater required for construction and/or O&M of the PG&E infrastructure would be accounted for in the conservative estimates for water demand associated with the Project. The additional impervious surface added as part of the PG&E infrastructure would be minimal (2 acres). Stormwater falling on impervious surfaces would flow into detention ponds, as described in Section 2.5.2.3, *Stormwater*, and shown on the preliminary site plan in Figure 2-3. Detention ponds would be located at the downstream end of the drainage area; these ponds would collect and control stormwater flow, and would direct the flow to detention basins that would facilitate infiltration of stormwater into the water table. Therefore, the PG&E infrastructure would have a less-than-significant impact under criterion b).

Related to criteria c)i) through c)iv), the Project would also result in the construction of PG&E infrastructure that would include the same types of activities as used for construction of the solar facility and ESS: grading, the construction and use of erosion control sediment basins and detention basins, and the addition of impervious area (e.g., 2-acre switchyard). These activities could change the Project site's drainage patterns and could lead to erosion, siltation, issues with flooding, or polluted runoff. However, the stormwater drainage system constructed as part of the Project, including temporary sediment basins and permanent detention ponds, would also manage stormwater in the area surrounding the on-the-ground PG&E infrastructure (e.g., switching station). The system would collect stormwater flows, facilitate infiltration, and slow the rate of runoff. The stormwater would then infiltrate into the subsurface as it does now, but in a controlled fashion to prevent erosion and flooding. Such basins would be dry except during or immediately after a storm. Additionally, development associated with the PG&E infrastructure would be included in the SWPPP. Therefore, the incremental contributions of the PG&E infrastructure to erosion and siltation, on-site or off-site flooding, impedance of flood flows, or additional sources of polluted runoff would be nominal, and the PG&E infrastructure would have a less-than-significant impact.

Additionally, related to criterion d), construction and O&M of the PG&E infrastructure could involve additional amounts of the same pollutants and/or liquids as would be used for the solar facility and ESS. Given that these pollutants and/or liquids would also be used near a flood hazard zone (Zone A), there could be a risk of release due to Project inundation. Compliance with the Applicant-proposed measures, including the Construction General Permit that requires a SWPPP and site-specific BMPs, would help ensure that pollutants associated with construction equipment and activities are managed properly and that releases during a flood event are avoided to the extent possible. Therefore, this impact would be less than significant.

Finally, with respect to criterion e), and as described in Section 2.9.3.1, *Erosion and Sediment Control and Pollution Prevention,* in Chapter 2, *Project Description*, Applicant-proposed measures are proposed for inclusion as part of the Project to reduce the potential for erosion and limit the mobilization of pollutants off-site through runoff during construction. As also described in Section 2.9.3.1, the Applicant would prepare, file, and implement a SWPPP in accordance with the Construction General Permit. The PG&E infrastructure would not conflict with or obstruct implementation of a water quality control plan (the Basin Plan) or sustainable groundwater management plan (the Pleasant Valley Subbasin GSP). Therefore, impacts would be less than significant.

3.11.4 Cumulative Analysis

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Significant cumulative impacts related to hydrology and water quality could occur if the incremental impacts of the Project would combine with the incremental impacts of one or more of the cumulative projects identified in Table 3.1-1, *Cumulative Projects List*. The projects presented in Table 3.1-1 are within a 15-mile radius of the Project site.

The geographic scope of the analysis of cumulative effects includes the Project site, as well as surface water and groundwater resources within the 15-mile radius of the Project site. The time frame during which the Project could contribute to cumulative effects on hydrology and water resources includes the 35-year term of the unclassified conditional use permit period from the moment that on-site activities

begin to the conclusion of post-Project site restoration activities. The potential cumulative impacts of implementation of the Project (solar facility, ESS, and PG&E infrastructure) on hydrology and water quality are evaluated below.

Impact 3.11-6: The Project could result in a cumulatively considerable contribution to cumulative effects related to violation of water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality. (*Less-than-Significant Impact*)

As analyzed in Section 3.11.3.3, *Direct and Indirect Effects of the Project,* Impact 3.11-1, the Project's incremental impacts related to a violation of water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality would be less than significant. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, involve site alteration and soil-disturbing activities that could release sediment and other pollutants into surface water or groundwater. Because the topography of the Project site and the sites of other projects in the cumulative scenario do not contain steep slopes and are over relatively flat terrain, the potential for erosive conditions would be low.

Projects that could generate stormwater runoff during soil-disturbing construction activities and discharge to surface waters would be required to adhere to the requirements of the state Construction General Permit and local policies. Like the Project, the cumulative projects would be required to prepare and implement a SWPPP and associated BMPs along with good housekeeping measures to capture and pre-treat stormwater on-site and effectively control runoff. The regulatory controls and requirements in the Construction General Permit and Fresno County requirements would reduce the incremental contributions of sediment and other pollutants that could otherwise compromise groundwater or surface waters or violate water quality requirements.

Therefore, based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to water quality. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.11-7: The Project could cause a cumulatively considerable contribution to decreased groundwater supplies or substantial interference with groundwater recharge such that the sustainable groundwater management of the basin could be impeded. (*Less-than-Significant Impact*)

As analyzed in Section 3.11.3.3, *Direct and Indirect Effects of the Project,* Impact 3.11-2, the Project's incremental impacts related to decreased groundwater supplies or substantial interference with groundwater recharge would be less than significant. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, may require groundwater to meet Project water demand that could decrease groundwater supplies; or these projects could create new impervious surface that could interfere with groundwater recharge in the Pleasant Valley Subbasin, or adjacent subbasins, including Kettleman Plain and Westside subbasins (see Figure 3.11-2). Cumulative projects could increase the use of groundwater and decrease groundwater supplies, and/or increase impervious areas and interfere with and reduce groundwater infiltration.

An analysis of cumulative impacts on groundwater considers groundwater extraction associated with the Project along with groundwater extraction from past, current, and reasonably foreseeable future projects. The GSAs for the respective groundwater basins are the agencies responsible for assessing and planning for the sustainable use of groundwater. They generally manage their water supply portfolios with consideration of these combined uses and their combined effects on the groundwater table associated with cumulative groundwater demand. Like the Project, the cumulative projects would be required to conduct water supply assessments to verify that surface water and/or groundwater supplies would likely be available without resulting in an appreciable lowering of surface water supplies or the groundwater table, respectively.

Similar to the Project, the cumulative projects would also be required to address impacts related to managing stormwater falling on impervious surfaces. Typical BMPs would include capturing stormwater and routing stormwater flow into detention ponds (similar to the Project) or having the project designed such that stormwater is routed to surrounding pervious areas to infiltrate into the ground.

Therefore, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to groundwater supply or groundwater recharge. The Project's contribution to cumulative effects would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.11-8: The Project could cause a cumulatively considerable contribution to a significant impact due to substantial alteration of 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 off-site; (iii) create 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) impede or redirect flood flows. (*Less-than-Significant Impact*)

As analyzed in Impact 3.11-3 above, the Project's incremental impacts related to erosion, siltation, flooding, stormwater drainage systems, or additional sources of polluted runoff due to substantial alteration of the existing drainage pattern of the site or area would be less than significant. Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, shows that the cumulative scenario includes multiple projects that, like the Project, involve alteration of the existing drainage pattern of the site or area. Similar to the Project, the cumulative projects would be required to implement a SWPPP or comparable pollution prevention plan similar to what would be implemented for the Project, consistent with requirements of the state Construction General Permit and local policies. The regulatory controls and requirements in the Construction General Permit and Fresno County requirements would prevent the incremental contributions of sediment and other pollutants that could otherwise compromise surface water or groundwater through runoff.

In addition, low-impact development design measures, including features such as detention ponds to capture, treat, and infiltrate stormwater, would be included as part of the Project and similarly for cumulative projects to prevent erosive or polluted runoff. Similar to the Project, cumulative projects would be required to prevent flooding by controlling runoff from their site during construction, operation,

and decommissioning (if applicable). The regulatory controls and specific requirements in the Construction General Permit and local policies include capturing and controlling stormwater to prevent on-site and off-site flooding.

As discussed in Impact 3.11-3, the Project does not have and is not connected to an existing or planned stormwater drainage system. Therefore, the Project would not combine with cumulative projects to cumulatively contribute to impacts on the stormwater drainage system. In addition, the Project would not result in additional sources of polluted runoff. Therefore, the Project could not combine with cumulative projects to cumulatively contribute to impacts related to additional sources of polluted runoff. Therefore, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to erosion, siltation, flooding, stormwater drainage systems, or additional sources of polluted runoff due to substantial alteration of the existing drainage pattern of the site or area. The Project's contribution to cumulative effects would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.11-9: The Project could cause a cumulatively considerable contribution to a significant impact related to the risk of release of pollutants due to project inundation. (*Less-than-Significant Impact*)

As analyzed in Section 3.11.3.3, *Direct and Indirect Effects of the Project,* Impact 3.11-4, the Project's incremental impacts related to the risk of release of pollutants due to Project inundation would be less than significant. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, would involve the use of pollutants for construction and operation. Similar to the Project, cumulative projects may be located in areas designated as Zone A, an area subject to the 1-percent-annual-chance flood. As discussed under Impact 3.11-6 and Impact 3.11-8, cumulative projects would be required to implement a SWPPP or comparable pollution prevention plan in compliance with the Construction General Permit and local requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; identify protocols for responding immediately to spills; and describe BMPs for controlling site runoff. Compliance with this regulation would help ensure that pollutants associated with construction equipment and activities are managed properly and that releases during a flood event are avoided to the extent possible. Any hazardous materials that would be stored on-site as part of O&M would be contained in designated areas in accordance with the HMBP. Therefore, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to the risk of release of pollutants due to project inundation. The Project's contribution to cumulative effects would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.11-10: The Project could cause a cumulatively considerable contribution that could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (*Less-than-Significant Impact)*

As analyzed in Section 3.11.3.3, *Direct and Indirect Effects of the Project,* Impact 3.11-5, the Project's incremental impacts related to conflicts with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan would be less than significant. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, would involve soil-disturbing activities that could conflict with or obstruct implementation of a water quality control plan. These projects would also involve groundwater demand and changes in impervious surfaces that could conflict with or obstruct implementation of a sustainable groundwater management plan.

Similar to the Project, as analyzed under Impact 3.11-6, cumulative projects that include construction with soil-disturbing activities would be controlled through implementation of erosion control measures and BMPs as part of the SWPPP in compliance with the Construction General Permit. Also similar to the Project, as analyzed under Impact 3.11-8, cumulative projects that would alter groundwater conditions would be required to conduct water supply assessments to verify that surface water and/or groundwater supplies would likely be available without resulting in an appreciable lowering of surface water supplies or the groundwater table, respectively.

Cumulative projects would also be required to address impacts related to managing stormwater falling on impervious surfaces to ensure that the project does not impede sustainable groundwater management as described in the respective GSP for the subbasin. With the implementation of these measures, the Project and cumulative projects would not affect groundwater quality; thus, they would not conflict with the water quality objectives of the Basin Plan or applicable GSP and therefore would not interfere with beneficial uses of surface water and groundwater. The Project's incremental contribution to cumulative effects would not be cumulatively considerable, and this impact would be less than significant.

3.11.5 References

Central Valley RWQCB (Central Valley Regional Water Quality Control Board). 2018. *Water Quality Control Plan for the Tulare Lake Basin*. Third Edition. Revised May 2018. Available: https://www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/tularelakebp_201805.pdf. Accessed August 21, 2024.

City of Coalinga. 2009. *City of Coalinga General Plan 2005-2025*. June 2009. Available: https://www.coalinga.com/DocumentCenter/View/120/Coalinga-General-Plan-2025-PDF. Accessed August 23, 2024.

DWR (California Department of Water Resources). 2006. San Joaquin Valley Groundwater Basin, Pleasant Valley Subbasin. In: *California's Groundwater,* Bulletin 118. Available: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_022_10_PleasantValleySubbasin.pdf. Last updated January 20, 2006. Accessed August 21, 2024.

DWR (California Department of Water Resources). 2024a. "Groundwater Sustainability Agencies." Available: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/Groundwater-Sustainable-Agencies. Accessed August 21, 2024.

DWR (California Department of Water Resources). 2024b. "San Joaquin Valley–Pleasant Valley Subbasin–2022 Groundwater Sustainability Plan." Available: https://sgma.water.ca.gov/portal/gsp/assessments/145. Accessed August 23, 2024.

FEMA (Federal Emergency Management Agency). 2020. "Flood Zones." Available: https://www.fema.gov/flood-zones. Last updated July 8, 2020. Accessed August 21, 2024.

FEMA (Federal Emergency Management Agency). 2024. "National Flood Hazard Layer (NFHL) Viewer." Last updated 2021. Available: https://www.fema.gov/flood-maps/national-flood-hazard-layer. Accessed August 21, 2024.

Fresno County. 2024. *Fresno County General Plan. Comprehensive General Plan Review and Revision.* Final. February 2024. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-maps. Accessed August 22, 2024.

Pleasant Valley GSA (Pleasant Valley Groundwater Sustainability Agency). 2022. *Pleasant Valley Groundwater Sustainability Plan.* February 22, 2022. Prepared with Provost & Pritchard Consulting Group and Kenneth D. Schmidt and Associates. Available: https://sgma.pleasantvalleywaterdistrict.com/. Accessed August 21, 2024.

Pleasant Valley GSA (Pleasant Valley Groundwater Sustainability Agency). 2024. *Pleasant Valley Groundwater Sustainability Plan*. February 22, 2022; revised July 9, 2024. Prepared with Provost & Pritchard Consulting Group and Kenneth D. Schmidt and Associates. Available: https://sgma.water.ca.gov/portal/service/gspdocument/download/10265. Accessed August 21, 2024.

State Water Board (State Water Resources Control Board). 2022. *Final California 2020–2022 Integrated Report (303(d) List/305(b) Report).* Available: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html. Accessed August 23, 2024.

State Water Board (State Water Resources Control Board). 2024a. eWRIMS—Electronic Water Rights Information Management System. Available: https://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/. Accessed August 23, 2024.

State Water Board (State Water Resources Control Board). 2024b. California Basin Plan Beneficial Use Viewer. Available: https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=116f7daa9c4d4103afda1257be82eb16. Accessed May 9, 2025.

USEPA (U.S. Environmental Protection Agency). 2023. Overview of Total Maximum Daily Loads (TMDLs). Available: https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls. Last updated November 14, 2023. Accessed August 21, 2024.

USEPA (U.S. Environmental Protection Agency). 2024. Summary of the Clean Water Act. Available: https://www.epa.gov/laws-regulations/summary-clean-water-act. Last updated June 12, 2024. Accessed August 21, 2024.

USEPA (U.S. Environmental Protection Agency). 2025. "National Menu of Best Management Practices (BMPs) for Stormwater-Construction"." Available: https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater-construction. Last updated February 14, 2025. Accessed May 9, 2025.

USGS (U.S. Geological Survey), 2024. "Science In Your Watershed: Locate Your Groundwater Site by 10-Digit HUC—1803001205 Zapato Chino Creek." Available: https://water.usgs.gov/wsc/a_api/aquifers/watershed18/1803001205.html. Accessed August 23, 2024.

3.12 Land Use and Planning

This section identifies and evaluates issues related to established communities and any conflicts with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. 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 land use and planning. Comments received during the scoping period are included in Appendix A, *Scoping Report*.

3.12.1 Setting

3.12.1.1 Study Area

The study area for the analysis of potential impacts related to land use and planning consists of the approximately 2,446-acre Project site within portions of eight parcels associated with Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12S, and 085-110-13S.

3.12.1.2 Environmental Setting

The Project site is located in an unincorporated area in western Fresno County within the Kettleman Plain, which consists of agricultural and vacant, undeveloped land. It is located approximately 11 miles southeast of the city of Coalinga and 2.8 miles northwest of the city of Avenal, and 4 miles west of Interstate 5. Historical agricultural uses on the Project site include cattle and sheep grazing. The Project site has been used for dry-farmed agricultural production of wheat and grazing fodder (see Chapter 2, *Project Description*). The northwest-to-southeast State Route 33 (South Lost Hills Road) and the north-to-south Sutter Avenue both bisect the Project site. Existing utility poles or power lines are located around the perimeter of the site. Three existing groundwater wells are located within the leased areas of the Project site. A commercial property that contains a warehouse is located southeast of the intersection of State Route 33 and Sutter Avenue.

Existing on-site uses are consistent with the Project site's Fresno County General Plan (General Plan) land use designation of Agriculture and zoning designations of Exclusive Agricultural (AE) (see Section 2.3.1, *On-Site Land Uses*). All eight parcels associated with the Project site are under active Williamson Act contracts. The site contains a mixture of Farmland of Local Importance and Prime Farmland (see Section 3.3, *Agriculture and Forestry Resources*).

The Project site is surrounded by agricultural land and vacant land to the north and south, the community of Lost Hills and vacant land to the east, and vacant, undeveloped land to the west. The community of Lost Hills is approximately 162 acres in size and is designated a Disadvantaged Unincorporated Community in Fresno County. There are 172 parcels within the community, most with single-family residences and accessory structures (Fresno County 2020). Eight residential structures are located adjacent to the Project boundary. The closest residence within the Lost Hills community would be approximately 200 feet from the nearest proposed photovoltaic panel.

3.12.1.3 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-E

The California Public Utilities Commission (CPUC) would have jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction, operation, and maintenance of the PG&E switching station 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 construction of its new 230-kilovolt switching station and installation of approximately 200 feet of new transmission line would be needed to connect the Project to the electrical grid. PG&E's work (as regulated by the CPUC) would not be subject to the County's land use approval requirements pursuant to Fresno County Zoning Code §804.1.030 (Fresno County 2024a). 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 CPUC General Order No. 131-E, §XI.B regarding land use matters.

Local

Fresno County General Plan

The Fresno County General Plan is the County's long-range land use 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 Environmental Justice. The Agriculture and Land Use Element describes the County's Land Use Diagram and related development standards and sets out goals and policies under eight main sections: Agriculture; Westside Rangelands; River Influence Areas; Westside Freeway Corridor; Non-Agricultural Rural Development; Urban Development Patterns; Incorporated City, City Fringe Area, and Unincorporated Community Development; and General and Administrative Provisions (Fresno County 2024b). The updated General Plan was approved on February 20, 2024, and the resulting revisions to the General Plan and the Zoning Ordinance govern use of the Project site and are considered in this analysis.

The Project site's General Plan land use designation is Agriculture, which provides for the production of crops and livestock, the location of necessary agricultural commercial centers, agricultural processing facilities, and certain non-agricultural activities as depicted in **Figure 3.12-1,** *General Plan Land Use Designations*. The Project site is located within the jurisdiction of the Coalinga Regional Plan as identified by the Fresno County General Plan. See *Coalinga Regional Plan* below for further details. The following General Plan goal and policies are relevant to the Project:

> **Goal LU-A:** To promote the long-term conservation of productive and potentially productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.
>
> > ***Policy LU-A.1 Agricultural Land Conservation:*** 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.3 Special Agricultural Uses: 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. Approval of these and similar uses in areas designated Agriculture shall be subject to 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 (1/4) mile radius;

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

Policy LU-A.13 Agricultural Buffers: The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.

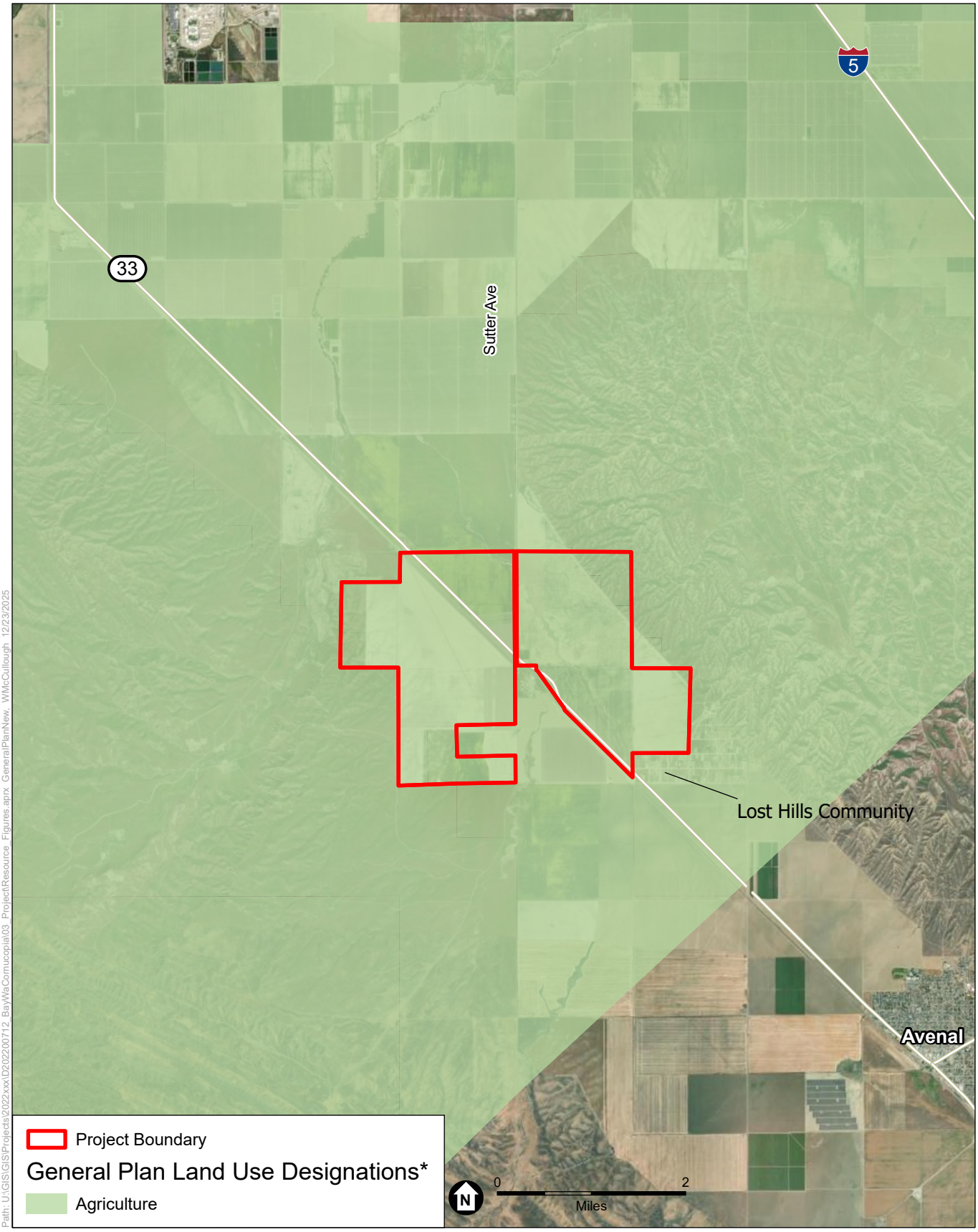
Policy LU-A.14 Agricultural Land Conversion Review: The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Coalinga Regional Plan

The Coalinga Regional Plan includes objectives and policies applicable specifically to the southwestern portion of Fresno County, as identified in the Fresno County General Plan. The Coalinga Regional Plan contains policies and management considerations that apply to the Project site but have since been incorporated into the County's General Plan so are referenced under discussion of the 2024 General Plan. The Land Use Element of the Coalinga Regional Plan is consistent with the Land Use Element of the Fresno County General Plan. This element is, therefore, subject to Countywide goals, objectives, criteria and standards (Fresno County 1974).

Fresno County Zoning Code

According to the Fresno County Zoning Map, the parcels associated with APNs 090-030-06S, 090-030-04S, 090-030-02S, and 085-110-13S are zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size); APN 090-040-01 is zoned AE-40 (Exclusive Agricultural, 40-acre minimum parcel size); and APNs 090-030-03, 085-110-23S, and 085-110-12S are zoned as AE-20/AE-40 pursuant to Fresno County Zoning Code §808.2. **Figure 3.12-2**, *Zoning Designations*, shows the zoning designations within and surrounding the Project site.



Path: U:\GIS\GIS\Projects\2022xxx\D202200712_BayWaCornucopia\03_Project\Resource_Figures.aprx GeneralPlanNew, WMcCullough 12/23/2025

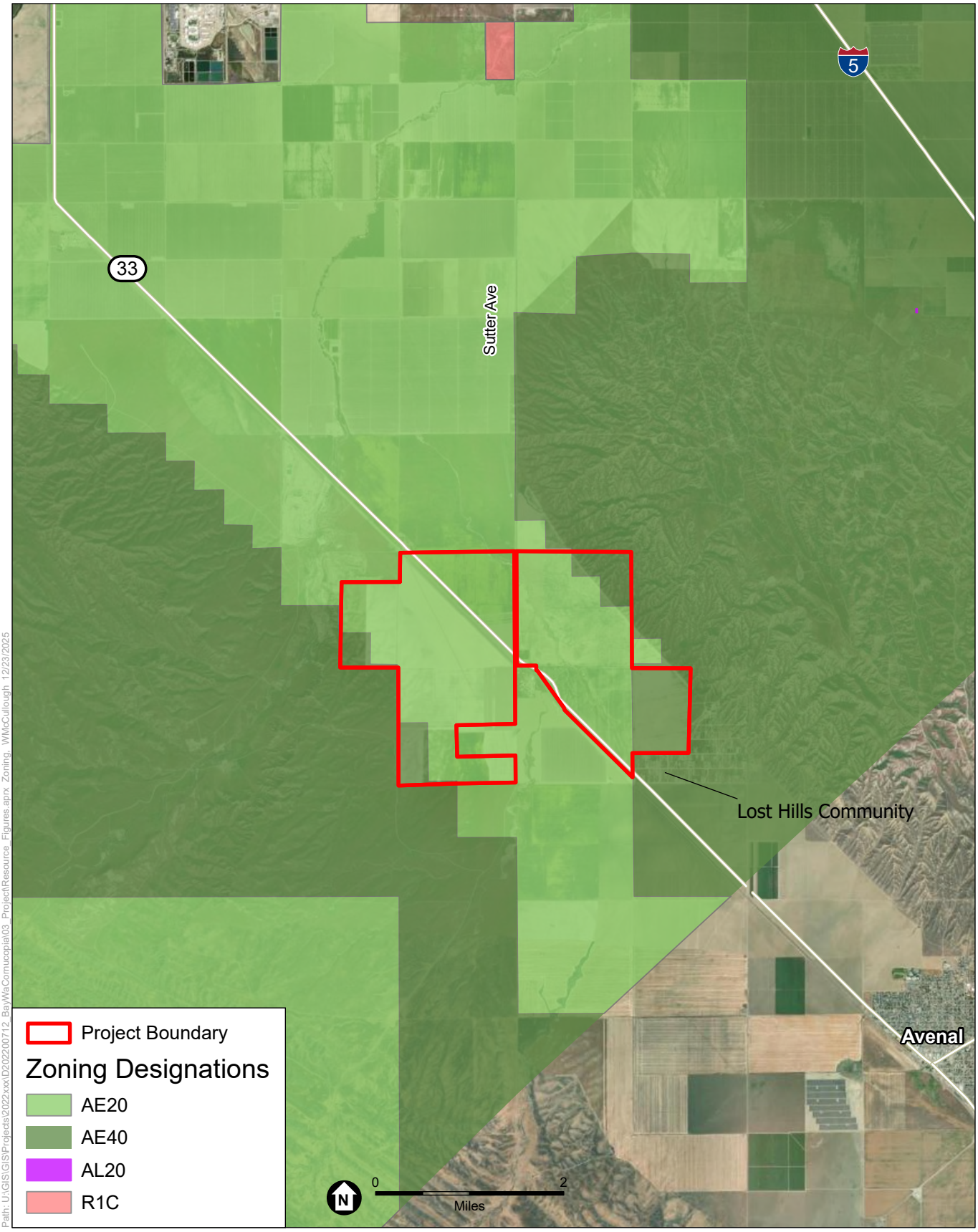
Source: ESA, 2024; Fresno County, 2024

* Note: Project located within the Coalinga Regional Plan.

Cornucopia Hybrid Project

Figure 3.12-1
General Plan Land Use Designations

ESA



Source: ESA, 2024; Fresno County, 2024

Cornucopia Hybrid Project

Figure 3.12-2
Zoning Designations

ESA

The "AE" District is an exclusive agricultural district for uses integral to an agricultural operation. This district is intended to protect the general welfare of the agricultural community from encroachments of non-agricultural uses, which by their nature would be injurious to the physical and economic well-being of the agricultural district. Permitted uses within the AE district include livestock and poultry (e.g., breeding, raising, and maintenance), raising crops, farm dwellings, packaging facilities, and other agriculture-related uses.

The County processes photovoltaic solar facility projects through the Unclassified Conditional Use Permit (CUP) process for public utility and public services, structures, uses, and buildings, as described in Fresno County Zoning Code §853.B.14 (Fresno County 2024a). Uses subject to Fresno County Director review and approval include communications equipment buildings, microwave relay structures, electrical (e.g., transmission and distribution) substations, and "commercial land leveling and development establishments when they are not operated in conjunction with, or as part of, a bona fide agricultural operation," among others (Fresno County 2024a). Exemptions from Land Use Permit Requirements as described in Fresno County Zoning Code §804.1.030 include the alteration, construction, erection, or maintenance of electric utilities by a public utility or public agency such as CPUC (Fresno County 2024a).

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). Several provisions applicable to the process for the review of applications for solar facilities are relevant to this analysis of potential impacts related to land use and planning:

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).
2. 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 ten 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.
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.
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.
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.

6. Provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements and specific measures to return the site to the agricultural capability prior to installation of solar improvements.
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.
8. Develop and submit a project site Pest Management Plan to identify methods and frequency to manage weeds, insects, disease and vertebrate pests that may impact adjacent sites.
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.
10. *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.
11. If the project is approved, the applicant shall make all reasonable efforts to establish a point of sale in Fresno County for equipment and construction related items necessary for the project.
12. 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.
13. In addition to disclosing the number of trips in the required project Operational Statement, the applicant shall disclose the weight of the shipments anticipated to the site. If the project is approved, pursuant to the CEQA analysis and based upon the existing road conditions and the weight/frequency of shipments to the site, the applicant shall mitigate impacts to County roads.
14. 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.

3.12.2 Significance Criteria

The Project would result in a significant impact related to land use and planning if it would do any of the following:

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.

3.12.3 Direct and Indirect Effects

3.12.3.1 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. Additional details regarding the Project's consistency with the General Plan and Solar Facility Guidelines are provided in **Appendix K,** *Land Use and Planning*.

3.12.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Criterion a) Whether the Project would physically divide an established community.

As described in Section 3.12.1.2, *Environmental Setting*, the Project site is located in rural, unincorporated western Fresno County between the cities of Coalinga and Avenal. It is adjacent to the unincorporated Lost Hills community.

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. As described in Section 3.12.1.2, *Environmental Setting*, the closest residence within the Lost Hills community would be approximately 200 feet from the nearest proposed photovoltaic panel located at the southeast corner of the Project site (see Figure 2-3). No current plans exist to expand the Lost Hills community adjacent to the Project site under the Fresno Multi-Jurisdictional 2023–2031 Housing Element (Fresno Council of Governments 2023). All areas designated for residential land use as stated by the Coalinga Regional Plan are within the Coalinga Community Plan area, which does not include the Project site (Fresno County 1974). Additionally, State Route 33 and Sutter Avenue are the only roadways that intersect the Project site and both roadways would remain open as local and regional transportation routes. Although the construction and operation 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. The local roads within the Lost Hills community would not be closed or blocked, even temporarily, by construction equipment or project supplies because there would be no access point to the Project from the Lost Hills neighborhood (see Figure 2-5, *Project 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 Applicant has filed Unclassified CUP and Variance applications to construct, operate, maintain, and decommission the photovoltaic electricity generating facility (including ancillary facilities) within the Project boundary. The County is processing the CUP application for the Project in accordance with the CUP process for public utility and public services, structures, uses, and buildings, as described in Zoning Code §853.B.14. The Project site is zoned AE-20 and AE-40. Compliance with conditions of approval for the CUP informed by the permit and environmental review processes would ensure that the Project would not conflict with the underlying AE-20 and AE-40 zones. The County is also processing the Variance application in accordance with the Zoning Code §860.5 (Variances/Minor Deviations). Required Variance findings include that the Variance is necessary for the preservation and enjoyment of a substantial property right of the applicant, and that granting of the Variance will not be contrary to the objectives of

the General Plan. Furthermore, the Variance, if granted, would not negatively affect property rights of adjacent landowners.

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 (1) maintain a 50-foot buffer between the Project and adjacent agricultural operations and (2) 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 because County review of the Unclassified CUP includes an assessment of the conversion of productive agricultural land and pertinent mitigation measures as presented in Section 3.3, *Agriculture and Forestry Resources*. Additional details of the Project's consistency with the Fresno County General Plan policies and programs are provided in Appendix K.1.

The Project would be required to comply with the Fresno County Solar Facility Guidelines where feasible. As described in Section 3.12.1.3, *Regulatory Setting*, these guidelines have been established to protect important farmlands and minimize the impacts of solar projects on adjacent agricultural operations. To meet these requirements, the Project would, for example, develop a pest management plan, provide information explaining why the subject site was selected, and implement a reclamation plan to return the site to prior agricultural use (i.e., dry-farmed agriculture) after Project decommissioning. Details of the Project's consistency with the Fresno County Solar Facility Guidelines are provided in Appendix K.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*)**

Pacific Gas and Electric Company Infrastructure

As described in Section 2.10, *PG&E Infrastructure*, PG&E would construct a switching station in the southeast corner of the Project site located directly adjacent to the Project substation (see Figure 2-3). The substation would connect to PG&E's high-voltage 230-kilovolt switching station by a new generation-tie line of up to 200 feet in length. Construction and operation of the PG&E 230-kilovolt switching station and transmission line 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 criterion a). ***(No Impact)***

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 thus would cause no impact relative to criterion b). The CPUC would have jurisdiction over PG&E's construction, operation, and maintenance of the PG&E switching station and improvements that would be needed to connect the Project to the grid as described in Section 3.12.1.3, *Regulatory Setting*. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters. ***(No Impact)***

3.12.4 Cumulative Analysis

Because the Project would not have any impact related to land use and planning, the Project could not cause or contribute to any cumulative impact. **(*No Impact*)**

3.12.5 References

Fresno Council of Governments. 2023. *Fresno Multi-Jurisdictional 2023–2031 Housing Element.* HCD Review Draft. December 2023. Available: https://www.fresnocountyca.gov/files/assets/county/v/1/2023-2031_mjhe_regional_fresnocounty.pdf. Accessed September 10, 2024.

Fresno County. 1974. *Coalinga Regional Plan*. 1974. Available upon request from Fresno County Public Works and Planning. Accessed September 10, 2024.

Fresno County. 2000. *Disadvantaged Unincorporated Communities SB 244*. Appendix B-2 to the Fresno County 2000 General Plan Policy Document. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/48571-sb-244-analysis.pdf. Accessed November 14, 2024.

Fresno County. 2017. Solar Facility Guidelines. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities/photovoltaic-facilities-p-1621. Accessed August 20, 2024.

Fresno County. 2024a. *Fresno County Zoning Ordinance (Zoning Ordinance Update). Zoning Ordinance.* February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/3/public-works-and-planning/zoning-ordinance/zoning-ordinance-final.pdf. Accessed August 20, 2024.

Fresno County. 2024b. *Fresno County General Plan Policy Document*. *General Plan Review.* Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed August 20, 2024.

3.13 Mineral Resources

This section identifies and evaluates issues related to mineral resources. 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 pertaining to mineral resources (Appendix A, *Scoping Report*).

The preparers of this Draft EIR independently reviewed the following sources: Fresno County General Plan Background Report (2023), California Department of Conservation, Division of Mine Reclamation mineral records (2024), and a mine records search of the U.S. Geological Survey (USGS) Mineral Resources Data System (USGS 2024), in addition to 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.

3.13.1 Setting

3.13.1.1 Study Area

The study area for the analysis of potential impacts on mineral resources is defined as the footprint of all Project components, including all areas of temporary and/or permanent ground disturbance. The study area is limited to the area within the Project site boundaries because impacts relative to mineral resources are generally site-specific.

3.13.1.2 Environmental Setting

Geologic Environment

As described more fully in Section 3.8, *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 alluvial deposits. The thickness of the surficial Holocene alluvium varies across the San Joaquin Basin but is expected to be approximately 15 feet or greater at the Project site.

Fresno County contains aggregate resources and high-value commodities such as granite and marble, oil, coal, gold, silver, copper, mercury, tungsten, chromium, and asbestos. Aggregate resources and chromium are the two most plentiful mineral resources (Fresno County 2023).

Mineral Resources Potential

The Mineral Resources Data System, administered by 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 or prospects, and unknown or undefined mineral resources within the study area, the Mineral Resources Data System online database was reviewed, as well as the California Department of Conservation, Division of Mine Reclamation, archive of mines (USGS 2024; California Department of Conservation, Division of Mine Reclamation 2024). No mineral resources or operations are located within the Project site boundary. The Zapato Chino Creek Pit and the Sierra Pacific Materials mines are approximately 1 mile away from the Project site. Both mines are primarily sand, gravel, and other construction aggregates.

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.

Sand and gravel deposits are ubiquitous throughout the Quaternary geologic deposits near the Project site and throughout the region (USGS 2024; California State Mining and Geology Board 2000).

According to a review of the Mineral Resources Data System 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 Nevada foothills to the east (USGS 2024). Numerous land sections within the mountainous areas have active mining claims. However, none of these resources occur 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.

Mineral Land Classification under the Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act of 1975 (SMARA), as amended, mandated the development of mineral land classifications. These classifications 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 provided guidelines for the proper 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. The Project site is within an area that has not been mapped under SMARA and thus is in an area that has not been designated an MRZ (Fresno County 2023).

Oil, Gas, and Geothermal Resources

The California Geologic Energy Management Division[1] provides oversight of the oil, natural gas, and geothermal industries, and regulates the drilling, operation, and permanent closure of energy resource wells. The division's online mapping application, Well Finder, was reviewed to determine the presence of any oil, gas, or geothermal resources on and around the Project site. Well Finder data indicate that there are no significant resources at the Project site. The Project site is located adjacent to the Kettleman North Dome Oil and Gas Field (CalGEM 2024). No active or previously active wells are present on-site.

3.13.1.3 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 (Public Resources Code §§2710–2796) and its implementing regulations (California Code of Regulations Title 14, §3500 et seq.) establish a comprehensive state policy for the conduct of surface

[1] Formerly known as the California Division of Oil, Gas, and Geothermal Resources.

mining operations and for reclaiming mined lands to a usable condition that is readily adaptable for alternative land uses. SMARA encourages the production, conservation, and protection of the state's mineral resources and recognizes that "the state's mineral resources are vital, finite, and important natural resources and the responsible protection and development of these mineral resources is vital to a sustainable California" (Public Resources Code §2711). Under SMARA, the term *minerals* includes "any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum" (California Code of Regulations Title 14, §3501).

The California Geological Survey maps and regulates the locations of potential mineral resources in California consistent with SMARA. To protect these potential mineral resources, the California Geological Survey has classified the regional significance of mineral resources into MRZs and mapped them. **Table 3.13-1** presents descriptions of the MRZ categories. As noted above, the Project site is within an area that has not been given a MRZ designation.

TABLE 3.13-1
DESCRIPTIONS OF CALIFORNIA MINERAL LAND CLASSIFICATION SYSTEM CATEGORIES

Mineral Resource Zone Category	Category Description	
MRZ-1	*Areas of No Mineral Resource Significance*	
MRZ-2	Demonstrated Reserves	*Areas of Identified Mineral Resource Significance*
MRZ-3	Known Mineral Occurrence	*Areas of Undetermined Mineral Resource Significance*
MRZ-4	No Known Mineral Occurrence	*Areas of Unknown Mineral Resource Significance*

Source: California State Mining and Geology Board 2000 n.d.

The Project site is not classified by the California State Mining and Geology Board as being located within a known mineral resource area (Fresno County 2023).

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state. PG&E's work (as regulated by the commission) would not be subject to the County's mineral resources-related requirements. However, the California Public Utilities Commission's General Order No. 131-E, §XI.B, would require PG&E to "consult with local agencies regarding land use matters," potentially including the impact on mineral resources.

Local

Fresno County General Plan

The Fresno County General Plan's 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 2024). Relevant policies from this planning document include:

Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Policy OS-C.1 Incompatible Mining Uses. The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.

Policy OS-C.2 Mineral Resource Zones. The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2).

Policy OS-C.3 Surface Mine Operation. The County shall require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and special zoning ordinance provisions.

Policy OS-C.4 Mining Impacts. The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.

Policy OS-C.5 Surface Mine Reclamation. The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.

Policy OS-C.6 Williamson Act on Mineral Deposits. The County may accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.

Policy OS-C.7 Mining Buffers. The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.

Policy OS-C.8 Aggregate Mine Buffers. The County shall, where feasible along the San Joaquin River, site recreational trails, bikeways, and other recreation areas at least three hundred (300) feet from the edge of active aggregate mining operations and separate them by physical barriers. Recreational trail/bikeway crossings of active haul routes should be avoided whenever possible; if crossings of haul routes are necessary, separate where feasible.

Policy OS-C.9 Mineral Resource Zone Compliance. The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of the State Surface Mining and Reclamation Act (SMARA).

Policy OS-C.10 Mineral Resource Lands Protection. The County shall not permit land uses that threaten the future availability of mineral resource or preclude future extraction of those resources.

Policy OS-C.11 Watershed-based Aggregate Mine Plan. As part of a future Kings River Regional Plan update the County shall undertake a watershed-based planning effort to assess future extraction of the aggregate resources and recreation uses along the Kings River as a part of an update of the Kings River Regional Plan. Such a planning effort would help to facilitate use of

the resource while protecting other Kings River watershed resources and functions, including floodplain areas.

Policy OS-C.12 New Development Compatibility. The County shall ensure that new discretionary land use developments are compatible with existing and potential surface mining areas and operations as identified on the Mineral Resource Zone Maps prepared by the State Division of Mines and Geology and other mineral resource areas identified by the County.

Policy OS-C.13 Oil and Gas Regulation Areas. Fresno County shall be divided into three areas for the regulation of oil and gas development.

a) Urban areas including all land within one-fourth mile of the planned urban boundaries shown on adopted community plans.

b) Established oil and gas fields as determined and updated by the California Division of Oil and Gas, excluding urban areas except where specifically included in these policies.

c) Non-urban areas including all land not within either established oil and gas fields or urban areas. A non-urban area's designation shall be changed to an established oil and gas field designation upon: (1) its identification by the Division of Oil and Gas as an oil and gas field, and (2) subsequent approval by the County.

Policy OS-C.14 Oil and Gas Permits. The County shall require a special permit for certain oil and gas activities and facilities as specifically noted in the Oil and Gas Development Matrix due to their potential significant adverse effects on surrounding land or land uses.

Policy OS-C.15 Small-scale Oil and Gas Facilities. The County shall permit by right small-scale oil and gas activities and facilities that can be demonstrated to not have a significant adverse effect on surrounding or adjacent land uses in an established oil and gas field, an established oil and gas field in urban areas, or non-urban areas.

Policy OS-C.16 Oil Refineries. The County may permit oil refineries to locate within areas designated by the General Plan for industrial uses. Limited oil refining plants may be permitted to locate in non-urban areas provided:

- the plant is limited to only fractionating and blending operations;
- the plant is within an established oil and gas field or within one mile of the exterior boundary of each of two (2) or more noncontiguous oil and gas fields;
- the site has access to both natural gas and crude oil transmission pipelines and a system of feeder pipelines from nearby gas and oil fields;
- the plant is limited to a refining capacity of fifteen thousand (15,000) barrels of crude oil per day; and
- the site has been previously used for refining purposes.

3.13.2 Significance Criteria

The Project would result in a significant impact related to mineral resources if it would do any of the following:

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.

3.13.3 Direct and Indirect Effects

3.13.3.1 Methodology

Mineral resources effects of the Project were 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. If any such resources are present, an assessment of the extent to which the Project would result in the loss of availability of these resources has been provided.

3.13.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Analysis of the setting and Project characteristics relative to the significance criteria show that the Project would have no impact on mineral resources. The reasoning supporting this conclusion follows.

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 of California, nor is it zoned a mineral resource zone by the Fresno County General Plan. There are two active mining claims approximately 1 mile from the Project site and an active oil or gas field located adjacent to but not on the Project site.

Construction, operation, and maintenance would occur in the Project footprint, and would therefore not directly interfere with either mining operations or the Kettleman North Dome oil field. Given that the Project site would be restored to current conditions at the end of the Project's lifetime, if significant mineral, oil, or gas resources are present at the site, the resources would continue to be available.

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. Therefore, 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.

As stated above, no significant mineral resources are present in or around the Project site. Further, the Project site is not located on land designated for mineral resources by the Fresno County General Plan. Therefore, implementation of the Project would result in no impact related to the loss of a locally important mineral resource recovery site. (*No Impact*)

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

As described in Section 2.10, *PG&E Infrastructure*, in Chapter 2, *Project Description*, to accommodate the solar facility and energy storage system, PG&E would construct a high-voltage 230-kilovolt switching station in the southeast corner of the Project site (see Figure 2-3), located directly adjacent to the Project substation. The substation would connect to PG&E's switching station by a new generation-tie line up to 200 feet in length. Project impacts specific to the PG&E infrastructure (i.e., the proposed solar facility and energy storage system) would cause no loss of availability of either a known mineral resource that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, there would be no impact under criteria a) and b) from the PG&E infrastructure.

Mitigation: None required.

3.13.4 Cumulative Analysis

Because the Project would cause no impact on the availability of known mineral resources or mineral resource recovery sites, the Project could not cause or contribute to any significant impact on such resources. As such, cumulatively, the Project would have **no impact** on mineral resources.

3.13.5 References

CalGEM (California Geologic Energy Management Division). 2024. CalGEM Well Finder, Interactive Map. Search term: Avenal. Available: https://maps.conservation.ca.gov/doggr/wellfinder/. Accessed September 22, 2024.

California Department of Conservation, Division of Mine Reclamation. 2024. Mines Online. Search term: Avenal. Available: https://maps.conservation.ca.gov/mol/index.html. Accessed September 13, 2024.

California State Mining and Geology Board. 2000. *California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Lands*.

Fresno County. 2023. *General Plan Background Report*. Public Review Draft. April 2023.

Fresno County. 2024. *Fresno County General Plan Policy Document*. *General Plan Review*. Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed August 20, 2024.

USGS (U.S. Geological Survey). 2024. Mineral Resources Data System: U.S. Geological Survey. Layers: USMIN Mineral Deposits; Mineral resources (MRDS). Available: https://mrdata.usgs.gov/general/map-us.html. Accessed September 13, 2024.

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3.14 Noise and Acoustics

This section identifies and evaluates issues related to noise and acoustics. 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 receive scoping comments regarding noise and acoustics (Appendix A, *Scoping Report*); however, these comments focused on potential impacts on nesting birds. Those potential impacts are addressed in Section 3.5, *Biological Resources*.

This analysis is based on the *Noise and Vibration Technical Report* by Rincon Consultants, Inc. (Appendix L). 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 for reliance, in combination with other materials included in the formal record, in the preparation of this Draft EIR.

3.14.1 Setting

3.14.1.1 Study Area

The study area for evaluation of noise and vibration impacts from construction, operation and maintenance (O&M), and decommissioning encompasses the Project site and the nearest potentially affected sensitive receptors. 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 from ambient conditions.

3.14.1.2 Environmental Setting

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 sound wave 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 0 dB corresponding roughly to the threshold of human hearing and 120–140 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 20–20,000 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. Consequently, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes 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 3.14-1** 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:

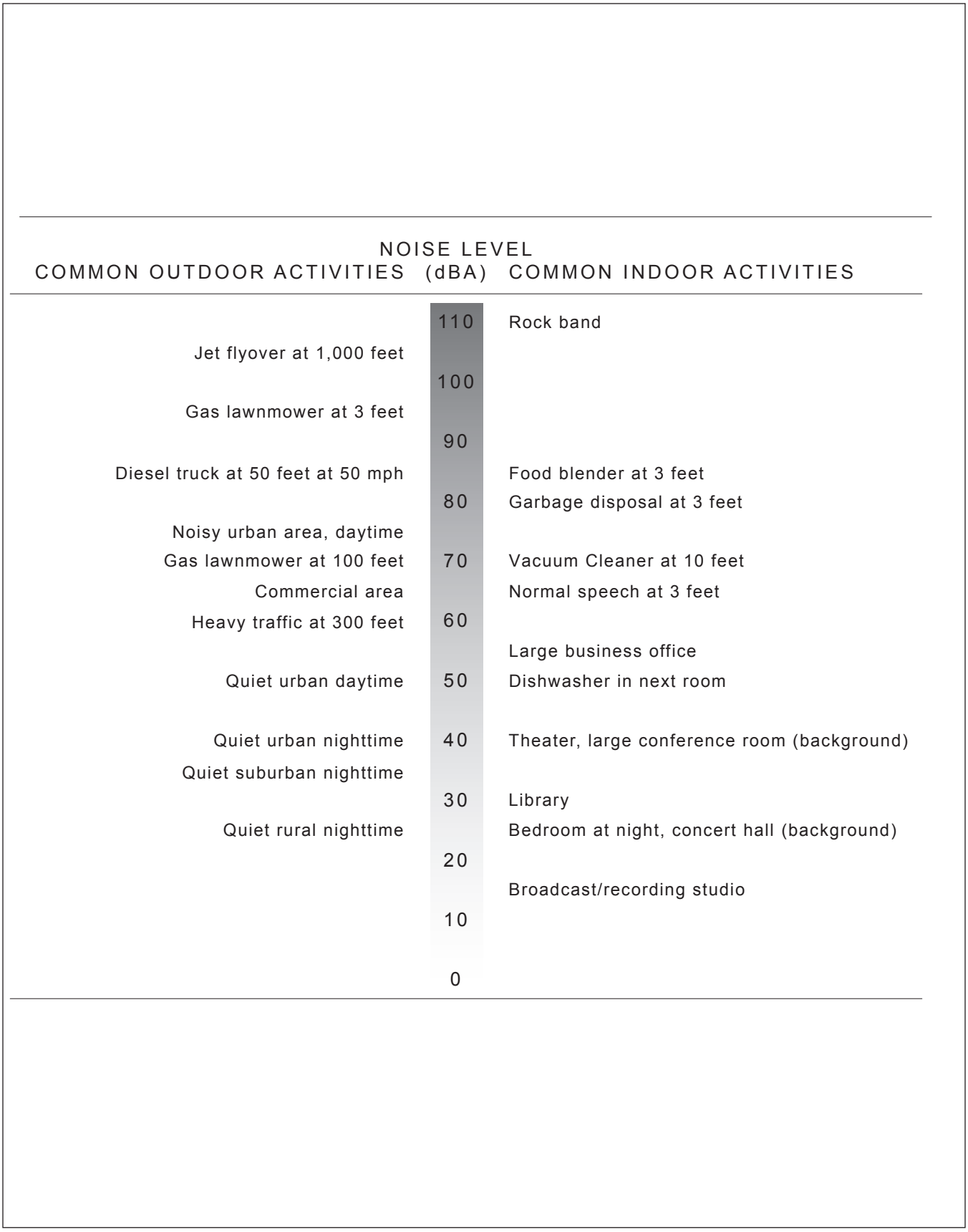
L_{eq}: The *equivalent sound level* is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level that would contain the same acoustic energy as the varying sound level during the same time period (i.e., the average noise exposure level for the given time period).

L_{dn}: The *day-night noise level* is the energy average of the A-weighted sound levels occurring during a 24-hour period, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL: Similar to the L_{dn}, the *community noise equivalent level* (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: This is 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}: This is the instantaneous maximum noise level measured during the measurement period of interest.



SOURCE: Caltrans, 2013

Cornucopia Hybrid Project

Figure 3.14-1
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. Regarding increases in A-weighted noise level, the following relationships occur (Caltrans 2013):

- 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.
- 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 1. A logarithmic scale is different in that the ratio of successive intervals is not equal to 1. 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 nonlinear 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 greater 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 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 noises such as a street with moving vehicles (a *line source*) typically would attenuate 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 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. Several different methods 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 on 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 (i.e., vibration decibels [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, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration (FTA 2018).

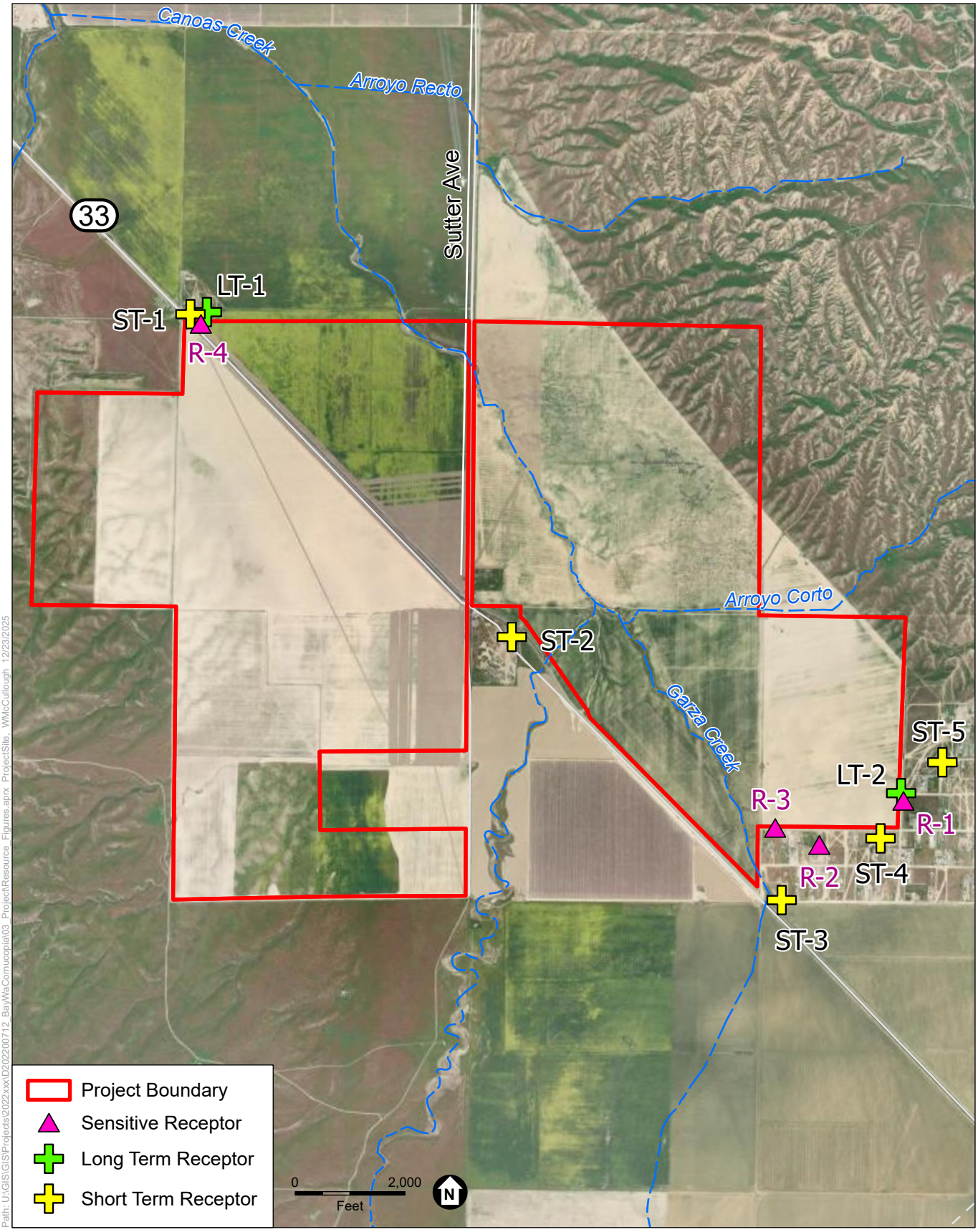
Sensitive Receptors

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, or contemplate, also are sensitive to noise. Commercial and industrial uses are considered the least sensitive to noise.

As shown on **Figure 3.14-2**, the nearest sensitive receptors are R1, at the residential property line near the southeastern corner of the Project site, east of State Route [SR] 33; R2, at the residential property line near the southern Project boundary, east of SR 33; R3, at the residential property line near the southwestern corner of the Project site, east of SR 33; and R4, at the residential property line near the northwestern corner of the Project site, east of SR 33.

Noise Sources and Ambient Noise Levels

The Project site is located in an area of relatively flat agricultural land with scattered rural residences. The main contributor to the existing noise environment in the vicinity of the Project site is traffic along SR 33. There are no public airports within 2 miles of the Project site.



Source: ESA, 2024; Rincon Consultants, Inc., 2024

Cornucopia Hybrid Project

Figure 3.14-2
Noise Measurement Locations

ESA

To provide the basis for the general noise environment on and around the Project site, five short-term (15-minute) noise measurements were conducted on Wednesday, February 28, 2024, and two long-term (24-hour) noise measurements were conducted on Wednesday, February 28, 2024, and Thursday, February 29, 2024, by Rincon Consultants to document existing ambient noise levels during typical daytime and nighttime hours (Appendix L). Noise measurement locations are shown in Figure 3.14-2, and noise results for the short-term and long-term monitoring locations are summarized in **Table 3.14-1** and **Table 3.14-2**, respectively.

TABLE 3.14-1
SHORT-TERM NOISE MONITORING RESULTS

Measurement Name	Measurement Location	Sample Times	Primary Noise Sources	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	L_{10} (dBA)	L_{50} (dBA)	L_{90} (dBA)
ST1	Off-site, along SR 33; near single-family residence at northwestern corner of Project site	2:25 p.m. to 2:40 p.m.	SR 33	62.5	36.9	79.9	66.6	45.0	38.6
ST2	Off-site, near agricultural building east of Sutter Avenue and south of SR 33	2:00 p.m. to 2:15 p.m.	SR 33	55.6	37.7	71.9	58.6	47.5	41.4
ST3	At property in ranch community near southeastern corner of Project site, approximately 0.3 mile south of southern Project boundary	12:30 p.m. to 12:45 p.m.	SR 33	50.5	37.9	66.3	53.3	44.8	39.2
ST4	At property in ranch community near southeastern corner of Project site, approximately 230 feet south of southern Project boundary	12:54 p.m. to 1:09 p.m.	SR 33; ambient agricultural/residential environment	43.5	39.2	60.1	43.1	40.9	39.9
ST5	At property in ranch community near southeastern corner of Project site, approximately 0.5 mile southeast of proposed energy storage area	1:16 p.m. to 1:31 p.m.	SR 33; ambient agricultural/ residential environment	48.3	38.8	60.3	51.9	45.7	41.5

Notes:

dBA = A-weighted decibels; L_{eq} = equivalent sound level; L_{min} = instantaneous minimum noise level; L_{max} = instantaneous maximum noise level; L_{10} = the level of noise exceeded 10 percent of the time; $L5_0$ = the level of noise exceeded 50 percent of the time; L_{10} = the level of noise exceeded 90 percent of the time; Project = Cornucopia Hybrid Project; SR = State Route

Source: Rincon 2024 (see Appendix L)

TABLE 3.14-2
LONG-TERM NOISE MONITORING RESULTS

Sample Time	L_{eq} (dBA)	Sample Time	L_{eq} (dBA)
LT1 – Single-family residences near northwestern corner of Project site, February 28–29, 2024			
3:00 PM	46	3:00 AM	48
4:00 PM	50	4:00 AM	50
5:00 PM	49	5:00 AM	56
6:00 PM	53	6:00 AM	57
7:00 PM	51	7:00 AM	55
8:00 PM	51	8:00 AM	55
9:00 PM	50	9:00 AM	52
10:00 PM	48	10:00 AM	51
11:00 PM	45	11:00 AM	55
12:00 AM	48	12:00 PM	55
1:00 AM	48	1:00 PM	53
2:00 AM	46	2:00 PM	60
24-hour Noise Level		**CNEL**	**58.4**
LT2 – Property in ranch community near southeastern corner of Project site, February 28–29, 2024			
3:00 PM	400	3:00 AM	51
4:00 PM	44	4:00 AM	43
5:00 PM	49	5:00 AM	47
6:00 PM	47	6:00 AM	50
7:00 PM	41	7:00 AM	52
8:00 PM	46	8:00 AM	47
9:00 PM	46	9:00 AM	44
10:00 PM	47	10:00 AM	48
11:00 PM	39	11:00 AM	53
12:00 AM	41	12:00 PM	54
1:00 AM	45	1:00 PM	50
2:00 AM	47	2:00 PM	53
24-hour Noise Level		**CNEL**	**54.3**

Notes:
CNEL = community noise equivalent level; dBA = A-weighted decibels; L_{eq} = equivalent sound level
Source: Rincon 2024 (see Appendix L)

As illustrated in Figure 3.14-2, short-term monitoring location ST-1 is located off-site along SR 33 at the single-family residence located near the northwestern area of the Project site, approximately 0.2 mile from the Project boundary. ST-2 is located near the agricultural building located east of Sutter Avenue and south of SR 33, approximately 0.5 mile from the Project boundary. ST-3 is located at a property in the unincorporated Fresno County community of Lost Hills near SR 33, approximately 0.3 mile south of

the southern Project boundary. ST-4 is located at a property in the Lost Hills community near the southeastern area of the Project site, approximately 230 feet south of the southern Project boundary; and ST-5 is located at a property in the Lost Hills community near the southeastern area of the Project site, approximately 0.5 mile southeast of the proposed energy storage area.

Long-term measurement location LT-1 is located near the single-family residence along SR 33 at the northwestern area of the Project site, near ST-1. Long-term measurement location LT-2 is located at a property in the Lost Hills community near the southeastern area of the Project site, generally in between ST-4 and ST-5. Noise levels at the LT-1 and LT-2 monitoring locations were 58 and 54 dBA CNEL, respectively.

3.14.1.3 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 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 usually 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 noise or vibration impact standards. For detailed analysis, FTA recommends estimation of the 8-hour L_{eq} for construction equipment for each phase of construction for comparison to the daytime and nighttime levels of 80 dBA and 70 dBA, respectively. The FTA recommends that the distances used to estimate construction noise levels at the closest sensitive receptors should be based on middle of the construction site. These noise levels are where adverse community reaction could occur at residential land uses (FTA 2018). FTA and the 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. FTA's threshold of architectural damage for conventional sensitive structures from groundborne vibration is measured as 0.2 inch per second (in/sec) PPV or 94 VdB (decibel units of 1 microinch per 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 30–70 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

The primary federal noise standards that directly regulate noise related to the operation of the Project relate to noise exposure and workers. The U.S. Occupational Safety and Health Administration (OSHA) enforces regulations to safeguard the hearing of workers exposed to occupational noise. OSHA has established worker noise exposure limits that vary with the duration of the exposure and requires implementation of a hearing conservation program if employees are exposed to noise levels in excess of 85 dBA. Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons,

gross vehicle weight rating) under 40 Code of Federal Regulations Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. Project operations would be subject to OSHA safety regulations.

State

California Planning and Zoning Law

Government Code §65302 encourages counties and cities to implement a noise element as part of the General Plan. In addition, the California Governor's Office of Land Use and Climate Innovation (formerly 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.

Occupational Safety and Health Standards

The California Occupational Safety and Health Administration has published Occupational Noise Exposure Regulations (California Code of Regulations Title 9, §§5095−5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards described above.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state. PG&E's work (as regulated by the commission) would not be subject to the County's noise-related requirements. However, the California Public Utilities Commission's General Order No. 131-E, §XI.B, would require PG&E to "consult with local agencies regarding land use matters," potentially including the impact of noise on sensitive receptors.

Local

Fresno County General Plan Health and Safety Element

The Fresno County General Plan's 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 2024). The following Fresno County General Plan policies also are relevant to the Project:

> ***Policy HS-H.1 Minimize Noise Impacts:*** The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.
>
> ***Policy HS-H.4 Noise Mitigation Design and Acoustical Analysis:*** 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 Figure HS-9: "Land Use Compatibility for Community Noise Environments;"
>
> b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.

Policy HS-H.5 Noise Mitigation Measures: 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-H.6 Construction-Related Noise: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Policy HS-H.8 Noise Levels Compatibility: 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 as **Figure 3.14-3**.]

Policy HS-H.10: Construction Vibration Control Measures: The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval for projects involving construction vibration within 50 feet of historic buildings or nearby sensitive receivers shall:

a. Avoid the use of vibratory rollers within 50 feet of historic buildings or residential buildings with plastered walls that are susceptible to damage from vibration; and

b. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that are identified as sensitive to daytime vibration by the Federal Transit Administration in Noise and Vibration Impact Assessment (FTA 2018).

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 3.14-3** 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 O&M noise levels to exceed an L_{50} of 50 dBA during daytime hours at the nearby residences.

TABLE 3.14-3
FRESNO COUNTY EXTERIOR NOISE LEVEL STANDARDS

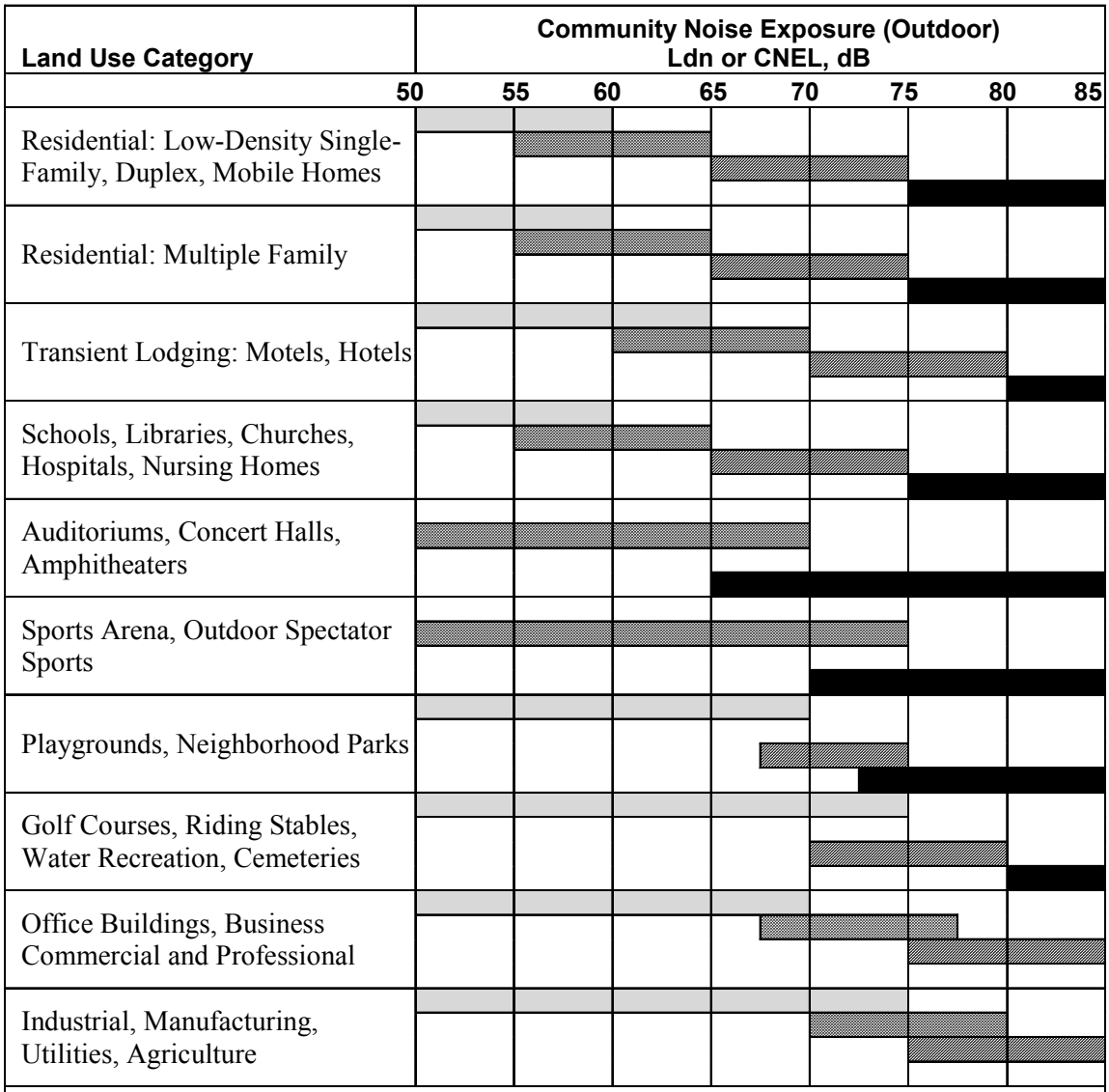
Cumulative minutes/hour (L_x)	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
30 (L_{50})	50	45
15 (L_{25})	55	50
5 ($L_{8.3}$)	60	55
1 ($L_{1.7}$)	65	60
0 (L_{max})	70	65

Notes:

L_x = sound level that is equaled or exceeded x percent of a specified time period; L_{max} = instantaneous maximum noise level

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.



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SOURCE: Fresno County 2000 General Plan

Cornucopia Hybrid Project

Figure 3.14-3

Community Noise Environment

In addition to the exterior noise standards, Noise Ordinance §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. Section 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, §8.40.060(h) would exempt noise sources associated with the drilling of water wells from the provisions of the County Noise Ordinance.

3.14.2 Significance Criteria

The Project would result in a significant impact related to noise if it would do any of the following:

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.

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.

3.14.3 Direct and Indirect Effects

3.14.3.1 Methodology

This analysis evaluates potential noise and vibration impacts of the Project based on review of sensitive receptors, ambient noise levels, and projected noise levels that would be associated with construction, O&M, and decommissioning of the Project. Impact discussions are based in part on the modeled noise and vibration levels of the Project as presented in the Noise and Vibration Technical Report (Appendix L) and compared to established standards.

Short-Term Construction Impacts 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 6:00 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. During nighttime hours, construction would be required to adhere to the Fresno County exterior noise standards: 45 dBA L_{eq} during the nighttime. Because Fresno County does not have an adopted noise impact standard for daytime construction activities, this analysis uses the FTA's recommended 8-hour L_{eq} limit of 80 dBA to assess the significance of daytime construction equipment noise levels.

A quantitative analysis of construction noise using the Federal Highway Administration's Roadway Construction Noise Model was performed for this analysis. Although it was developed by the Federal Highway Administration, this model 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 the Roadway Construction Noise Model 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 modeled with no obstacles to the travel of sound between the construction activity and receiver location, which is a worst-case assumption). Noise-producing activities during decommissioning were conservatively assumed to be similar in extent to construction activities; therefore, all construction-related impacts and mitigation measures would also apply to decommissioning.

Long-Term Operation and Maintenance Impacts

Long-term O&M 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 a 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.

Additionally, the Fresno County General Plan considers the contributions of daytime and nighttime noise levels. The maximum allowable noise exposure level for residential land uses is 60 dBA CNEL.

As described in Section 3.14.1, *Setting*, a change in noise of at least 5 dBA is required before a readily perceptible human response would be expected. In addition, in the context of an energy project, the California Energy Commission determined that less-than-significant noise impacts would result if daytime noise levels would increase by no more than 10 dBA and nighttime noise levels would increase by no more than 5 dBA over ambient conditions (CEC 2010). These increases represent a perceived doubling of loudness and a readily perceptible increase in noise, respectively (Caltrans 2013). Therefore, absent an adopted countywide threshold of significance that addresses the increase over existing ambient conditions, the County has determined that increases in ambient noise levels associated with the Project's long-term O&M activities would result in a significant impact if ambient noise levels at sensitive receptor locations would increase by more than 10 dBA during daytime hours or by more than 5 dBA at night.

Vibration Impacts

A numerical threshold to identify the point at which a vibration impact would occur has not been identified by County standards or codes. General Plan Policy HS.H-10 (Construction Vibration Control Measures) identifies two measures to avoid vibration-related impacts from construction. These include avoiding use of vibratory rollers within 50 feet of sensitive buildings and limiting high-vibration activities to the hours of least impact. 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 fewer than 30 piles per day and would not

work in the immediate vicinity of another pile driver; 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.

3.14.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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 3.14-1: 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 would be expected to last up to 39 months. Specifically, construction of the solar facility would be scheduled to start in the fourth quarter of 2026 and be completed in the fourth quarter of 2029. The energy storage system (ESS) would be scheduled to start construction in late 2027 and be completed in late 2028. Construction would occur primarily during the County's exempt hours of construction activities. (The potential impacts of the occasional construction activities that may occur outside of these hours are analyzed below.) Most deliveries would also be expected to occur during the exempt hours of construction.

Project construction would consist of several phases: grading and site preparation, trenching, solar photovoltaic system assembly and installation, battery ESS installation, generation-tie (gen-tie) installation, and construction of other on-site structures including fencing. 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 L. 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 6–10 feet into the ground.

As discussed above, noise from construction or decommissioning 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 6:00 a.m. and 9:00 p.m. Mondays through Fridays, or between 7:00 a.m. and 5:00 p.m. on Saturdays and Sundays.

The construction activities most likely to cause these peak noise levels would occur during typical, daytime hours when construction noise sources are exempt under Fresno County's Noise Ordinance. Project-related construction activities that may occur outside these exempt hours include activity for

material and equipment delivery and/or where the schedule has been delayed due to weather or other events.

Decommissioning is conservatively assumed to be similar to construction in the extent of its noise-producing activities; consequently, all construction-related impacts would also apply to decommissioning after removal of above-grade equipment and structures.

The construction phases were modeled to assess construction-related noise impacts (Appendix L). The nearest noise-sensitive uses to the Project site are residences 195 feet southeast of the Project site, east of SR 33. Based on the modeling, at a distance of 195 feet, the substation, switchyard, and gen-tie phase would generate an unshielded noise level of 77 dBA L_{eq} (8-hour) at the nearest sensitive receptor to the Project site. With the addition of impact pile driving for the solar array installation phase, construction would generate a noise level of 78 dBA L_{eq} (8-hour) at 195 feet. These noise levels from peak construction activity would exceed the existing monitored daytime noise level of 54.3 dBA CNEL near the southeastern corner of the Project site east of SR 33, where the nearest receptors are located, and hence could result in a noticeable increase during the daytime hours when occurring near receptors. However, noise levels generated during construction of the Project would be below the FTA daytime construction noise criterion of 80 dBA L_{eq} at nearby noise-sensitive receivers.

The Fresno County Noise Ordinance exempts construction activity noise from standard exterior noise exposure limits, if conducted between 6:00 a.m. and 9:00 p.m. on Mondays through Fridays, or between 7:00 a.m. and 5:00 p.m. on Saturdays and Sundays. Most Project-related construction activity is expected to occur within the window of time covered by the noise ordinance exemption. Construction workers would work 8- to 10-hour days, Monday through Friday. A less-than-significant impact would result from construction and decommissioning activities undertaken during the County's exempt times.

Although weekend and overtime construction is not anticipated, it may occasionally be needed to meet Project milestones. If nighttime work hours or work on weekends is necessary, such work could be scheduled consistent with Fresno County General Plan and County code provisions. Construction requirements would require some nighttime activity for material and equipment delivery and/or where the schedule has been delayed due to weather or other events. The nighttime L_{eq} limit is 45 dBA based on the County's exterior noise level standard and may be exceeded at the nearest receptors on some occasions if nighttime work is required and near the southeast Project boundary. If construction of the Project were to occur during nighttime hours, it could generate noise levels exceeding the County's 45 dBA nighttime standard, depending on the location where such work might occur. Although §8.040.110 of the County Code provides a mechanism for the granting of variances from noise ordinance restrictions that must be approved by the County Board of Supervisors, provision of such a variance does not necessarily mean that no nighttime noise impact would occur. Therefore, mitigation measures are identified to address this potential significant noise impact.

Because of the infrequent nature of loud construction activities at the site and the limited hours of construction, with implementation of identified noise mitigation measures, the impact related to the temporary noise increase caused by construction would be less than significant with mitigation.

> **Mitigation Measure 3.14-1: Nighttime Noise Reduction for Construction Activities.** Before the issuance of construction permits for the project, the Applicant shall submit to the County for

approval a construction noise reduction plan to be implemented by all contractors as a condition of the contract. The contents of the plan may be included in the final site plan submittal, and should include at a minimum:

- Maintain all construction tools and equipment in good operating order according to manufacturers' specifications.
- Limit the use of pile drivers and major excavating and earth-moving machinery to daytime hours.
- Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) on equipment and trucks used for construction.
- 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, and is routinely inspected by the construction manager.
- For construction devices that use internal combustion engines, ensure that the engine's housing doors are kept closed, and install noise-insulating material mounted on the engine housing consistent with manufacturers' guidelines, if possible.
- To the extent feasible, limit possible evening and nighttime shift work to low-noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment such that noise levels at 50 feet are less than 80 dBA.
- Operate noisy equipment only when necessary and switch such equipment off when not in use. All other equipment shall be turned off if not in use for more than 5 minutes. The construction manager shall be responsible for enforcing this provision.
- Locate stationary noise sources as far from adjacent receptors as possible, and muffle and enclose such noise sources within temporary sheds, incorporate insulation barriers, or include other measures.

Significance after Mitigation: 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. Because of the infrequent nature of construction activities requiring construction outside the hours permitted by the Fresno County noise ordinance, with implementation of Mitigation Measure 3.14-1, the temporary increase in noise due to construction would be a less-than-significant impact.

Construction Traffic Noise

SR 33 is the major road in the Project vicinity, with an existing average annual daily trip volume of 3,100 vehicles. The Project would be expected to generate 1,200 daily vehicle trips between workers and deliveries during the solar array installation phase. Traffic noise modeling estimated the traffic noise level increase at the residences along SR 33 near the Project site to be approximately 1.3 dBA CNEL. An increase of less than 5 dBA CNEL would not be considered significant under the California Energy Commission's guidelines for operational noise or permanent increases (CEC 2010) and would be less an increase considered to represent a readily perceptible increase in noise (Caltrans 2013). In addition, construction traffic is anticipated to occur only during the day, which would cause the least disruption to sleep or relaxation patterns. Because of the small increase in roadside noise levels and the temporary

nature of the traffic noise increase, impacts related to construction traffic noise would be less than significant.

Operation and Maintenance

Long-term operational point sources of noise would include stationary equipment related to the solar facility. The primary on-site noise sources from O&M would be associated with the inverters, transformers, and solar panel single-axis trackers (if trackers are used). The Project would include a battery ESS and an O&M building for on-site employees. The ESS equipment would be enclosed in a structure, container boxes, or trailers. The ESS is expected to include heating, ventilation, and air conditioning units, as would the O&M and control services buildings. Operational noise levels were calculated using SoundPLAN noise modeling software, Version 9.0 (see Appendix L for details).

Table 3.14-4 shows the projected exterior sound levels resulting from full operation of the Project at each of the closest receptors. **Figure 3.14-4** shows ground-floor noise contours from operational equipment. The table shows that the Project's highest operational noise levels at receptors R1, R2, R3, and R4 would comply with the Fresno County Noise Control Ordinance's daytime and nighttime threshold limits of 50 dBA and 45 dBA, respectively. As a result, operational noise impacts would be less than significant.

TABLE 3.14-4
PROJECT OPERATIONAL NOISE LEVELS

Receiver Name	Receiver Description	Modeled Noise Level (dBA L_{eq})	Exceeds Daytime Noise Threshold?[1]	Exceeds Nighttime Noise Threshold?[1]
R1	Residential property line near the southeastern corner of the Project site, east of SR 33	38.4	No	No
R2	Residential property line near the southern Project boundary, east of SR 33	37.3	No	No
R3	Residential property line near the southwestern corner of the Project site, east of SR 33	37.9	No	No
R4	Residential property line near the northwestern corner of the Project site, east of SR 33	31.0	No	No

Notes:

dBA = A-weighted decibels; L_{eq} = equivalent sound level; Project = Cornucopia Hybrid Project; SR = State Route.

1. Per the Fresno County Code of Ordinances, the applicable daytime noise threshold (7:00 a.m. to 10:00 p.m.) is 50 dBA L_{eq} at residential properties, while the applicable nighttime noise threshold (10:00 p.m. to 7:00 a.m.) is 45 dBA L_{eq} at residential properties.

Source: Rincon 2024 (see Appendix L)

On-Site Vehicles

During Project O&M, staff would operate, maintain, and monitor the site. Maintenance trucks would be used to perform routine maintenance, such as panel washing and occasional facility repairs. Assumed routine operations would require two weekly visits to the facility by two workers in a light utility truck. This number of additional vehicle trips on nearby roadways would result in a negligible increase in roadway traffic noise (much less than 0.1 dBA CNEL) when compared to the existing average daily traffic volume of 3,100 vehicles on SR 33.



SOURCE: Rincon Consultants, Inc., 2024

Cornucopia Hybrid Project

Figure 3.14-4
Project Operational Equipment Noise Contours

ESA

Additionally, three to four semi-trucks would be used to transport sheep to and from the Project site. The sheep would be delivered at the start of the season in February or March each year and removed near the end of June or early July. This would require up to eight vehicle trips for two days per year on SR 33. This number of additional vehicle trips on nearby roadways would result in a negligible increase in roadway traffic noise (much less than 0.1 dBA CNEL) when compared to the existing average daily traffic volume of 3,100 vehicles on SR 33. This increase of less than 5 dBA would not exceed the significance threshold and is less than an increase considered to represent a readily perceptible increase in noise (Caltrans 2013). Therefore, a less-than-significant impact would result.

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's 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-kilovolt (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 2,000 feet away, would not be audible and would also be less than the County's nighttime threshold of 45 dBA. Operational corona noise associated with the proposed gen-tie line would not represent a substantial increase in ambient noise levels. The impact would be less than significant.

Agricultural Noise

The Applicant has partnered with a local shepherd to use sheep grazing for vegetation management during Project operation. Should sheep grazing occur, it would involve the deployment of approximately 1,500–2,000 sheep during the grazing season, which is anticipated to be from approximately February to July each year. This would also involve approximately two dogs, who would remain with the sheep. The sheep would remain at the site during the grazing season to remove dry vegetation from the site and reduce fire fuel loads. While these sheep and dogs would produce some noise at the site over the approximately 6 months they are on the site, it is not anticipated that livestock-generated noise would be substantial, and it is expected that operational noise from grazing sheep would be compatible with the overall agricultural nature of the Project vicinity. Thus, noise impacts related to sheep grazing would also be less than significant.

Criterion b) Whether the Project would generate excessive groundborne vibration or groundborne noise levels.

Impact 3.14-2: The Project would not expose people and/or structures to excessive vibration levels. (*Less than Significant with Mitigation Incorporated*)

Construction and Decommissioning

Temporary sources of groundborne vibration and noise during grading, trenching, and other initial construction activities for the Project would be produced by the operation of heavy construction

equipment. The construction equipment most likely to create vibration includes large and small bulldozers, pile drivers, loaded trucks, and jackhammers.

The use of pile driving generates peak vibration levels of 1.518 in/sec PPV at a distance of 25 feet. Based on calculations of vibration propagation, construction vibration levels for a pile driver at the nearest receptor are predicted to be reduced to below 0.044 in/sec PPV (81 VdB) at approximately 265 feet. Project construction would generate vibration levels above the human perception threshold of approximately 65 VdB. Therefore, construction-related vibration associated with the Project would result in a significant impact. Implementation of Mitigation Measure 3.14-1 above would limit the use of pile drivers to daytime use. This would avoid hours when nearby residents would reasonably be expected to sleep, which is the basis for FTA's vibration criterion for human annoyance. Therefore, this impact would be **less than significant with mitigation**.

Decommissioning activities would use equipment similar to that used for construction and would similarly not affect nearby sensitive receptors with the implementation of Mitigation Measure 3.14-1. Therefore, groundborne vibration impacts of Project decommissioning would be less than significant with mitigation incorporated.

Mitigation: Implement Mitigation Measure 3.14-1.

Significance after Mitigation: Less-than-significant impact.

Operation and Maintenance

The Project does not propose the use of large, rotating equipment or other types of equipment or activities during the O&M phase that would introduce any new sources of perceivable groundborne vibration. In addition, O&M would not require the use of heavy equipment. Therefore, a less-than-significant impact would result.

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 within 2 miles of the Project site (Fresno COG 2018). A review of aerial photography indicates that there are no private airstrips within 2 miles of the Project site. The nearest airport to the Project site is the New Coalinga Municipal Airport, which is located approximately 9 miles to the northwest. Therefore, no impact would occur 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*)

Pacific Gas and Electric Company Infrastructure

As described in Section 2.10, *PG&E Infrastructure*, in Chapter 2, *Project Description*, PG&E would construct a switching station in the southeast corner of the Project site and would connect to PG&E's high-voltage 230 kV switching station by a new gen-tie line, which may be up to 200 feet in length. The 230kV switching station would then connect to PG&E's existing 230 kV transmission lines located

directly adjacent to the switching station. The impacts of PG&E's construction and O&M of this infrastructure are analyzed above as part of the Project. Construction of the PG&E improvements would start in late 2027 and last approximately 6 months.

The nearest sensitive residential receptor would be approximately 0.6 mile from the switching station. Noise levels from construction of the switching station installation would be similar to those disclosed above for the substation, switchyard, and gen-tie installation (i.e., 88 dBA L_{eq} at 50 feet from the source). However, at a distance of 639 feet, construction noise levels would attenuate to approximately 66 dBA L_{eq} (Appendix L), which would be below FTA's daytime construction noise criterion of 90 dBA L_{eq} at nearby noise-sensitive receivers. Therefore, the PG&E work at the switching substation would cause a less-than-significant impact with respect to exposure of people to excessive noise levels, under criterion a). The attenuated vibration level for a vibratory roller at 1,000 feet from the switching station to the nearest receptor would be well below the building damage and human annoyance vibration thresholds. Therefore, the PG&E work would cause a less-than-significant impact due to substantial structural effects from vibration and an annoyance impact, respectively, under criterion b). There would be no impact under criterion c), as the PG&E infrastructure is not near airport influence areas or people residing or working within the vicinity of an airport or airstrip.

3.14.4 Cumulative Analysis

As discussed above, no impact would occur with respect to exposure of people residing or working within the vicinity of a private airstrip, public airport, or public use airport in the Project area. Therefore, the Project would cause no impacts that could cause or contribute to any potential significant cumulative impact regarding criterion c). The potential for the Project to cause or contribute to a potential significant cumulative impact with respect to the remaining noise and vibration considerations is evaluated below.

Impact 3.14-3: The Project would not cause a cumulatively considerable contribution to any significant noise or vibration impact. (*Less-than-Significant Impact*)

The geographic scope considered for this evaluation of potential cumulative impacts related to noise and vibration is the area within 1 mile of the Project site because sounds and vibration naturally attenuate with distance and topography. The temporal scope for potential cumulative impacts begins with the initiation of on-site construction activities and ends with the conclusion of on-site work for decommissioning and reclamation. Among the projects identified in Section 3.1, *Introduction to Environmental Analysis*, and as listed in Figure 3.1-1, there are no projects that are within this geographic scope. Therefore, the analysis is the same for the solar facility, ESS, and PG&E infrastructure. At the closest, the 12,200-square-foot proposed grocery store southeast of the Project site would be 3.5 miles from the Project site. Because of the distance between these projects and the Project site, there is no possibility that noise from construction, O&M, or decommissioning of the Project could combine with noise from any other projects to cause or contribute to a significant cumulative effect.

For the same reasons, the PG&E Improvements would not cause or contribute to cumulative impacts related to noise.

3.14.5 References

Caltrans (California Department of Transportation). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013.

CEC (California Energy Commission). 2010. *Calico Solar Power Project Commission Decision 2010-012-CMF*. Sacramento, CA.

Clearway. 2020, *Sound Survey and Analysis Report*. Luna Valley Solar Project. September 15, 2020.

Fresno COG (Fresno Council of Governments). 2018. *Fresno County Airport Land Use Compatibility Plan Update*. December 2018. Available: https://www.fresnocog.org/wp-content/uploads/2019/01/fresno-draft-ALUCP-12-04-17c.pdf. Accessed September 11, 2024.

Fresno County. 1978. *Fresno County Code of Ordinances*, Chapter 8.40, Noise Control. Available: https://library.municode.com/ca/fresno_county/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.40NOCO_8.40.040EXNOST. Accessed September 11, 2024.

Fresno County. 2024. *Fresno County General Plan Health and Safety Element*. February 2024.

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. May 2006.

FTA (Federal Transit Administration). 2018. *Transit Noise and Vibration Impact Assessment Manual*. FTA Report No. 0123. Prepared by John A. Volpe National Transportation Systems Center. September 2018.

Rincon (Rincon Consultants, Inc.) 2024. *Cornucopia Hybrid Project, Noise and Vibration Technical Report*. Fresno, CA. Prepared for BayWa r.e. Solar Projects, LLC, Irvine, CA. June 2024.

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3.15 Population and Housing

This section identifies and evaluates issues related to population and housing. 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*).

3.15.1 Setting

3.15.1.1 Study Area

The study area for the analysis of potential impacts related 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). Figure 3.15-1 depicts the counties and incorporated cities within the study area. This study area represents the maximum reasonable distance that Project workers would reasonably be expected to travel (commute) to work at the Project site.

3.15.1.2 Environmental Setting

Population

The study area encompasses portions of nine counties and numerous incorporated and unincorporated communities. This discussion provides population information on communities within the two counties surrounding or closest to the Project site, as those would be the more likely locations from which Project workers would commute. **Table 3.15-1** identifies population characteristics for Fresno and Kings counties and the incorporated cities in the study area. As shown, most jurisdictions near the Project site experienced population growth between 2000 and 2024. In 2024, Fresno County had an estimated population of 1,017,431, an increase of approximately 27 percent from the 2000 population of 799,407. The City of Fresno had an estimated population of 546,971 in 2024, an increase of approximately 28 percent from 2000, when it had a population of 427,719. Neighboring Kings County had an estimated population of 152,627 in 2024, an increase of approximately 18 percent from the 2000 population of 129,461.

TABLE 3.15-1
HISTORIC AND EXISTING POPULATION IN THE STUDY AREA

Area	2000[a]	2005[a]	2010[a]	2015[b]	2024[c]
Fresno County	799,407	866,058	930,450	975,108	1,017,431
Kings County	129,461	143,607	152,982	149,275	152,627
City of Fresno	427,719	457,786	494,665	522,016	546,971
City of Coalinga	15,798	16,566	18,087	16,467	17,107
City of Avenal	14,674	15,898	15,505	12,950	13,981
City of Huron	6,310	6,343	6,754	6,887	6,348
City of Mendota	7,890	9,179	11,014	11,235	12,531
City of Clovis	68,516	84,552	95,631	105,038	126,133
City of Reedley	20,756	21,447	24,194	25,542	25,653
City of Sanger	18,931	21,297	24,270	25,246	26,357

Area	2000[a]	2005[a]	2010[a]	2015[b]	2024[c]
City of Fowler	3,979	4,602	5,561	5,928	7,367
City of Parlier	11,145	13,018	14,463	15,048	14,368
City of Selma	19,444	22,160	23,219	23,898	24,371
City of Kerman	8,548	10,985	13,544	14,584	17,256
City of San Joaquin	3,270	3,569	4,001	4,063	3,616
City of Firebaugh	5,743	6,953	7,549	7,827	8,415
City of Madera	43,205	51,735	61,416	63,147	66,560
City of Chowchilla	14,416	16,052	18,720	18,626	18,930
City of Merced	63,893	72,402	78,958	82,379	91,837
City of Dinuba	16,844	18,989	21,453	24,135	25,573
City of Visalia	91,891	106,054	124,442	130,627	144,532
City of Tulare	43,994	48,974	59,278	62,407	70,799
City of Lemoore	19,712	21,893	24,351	25,252	26,855
City of Hanford	41,687	48,016	53,967	55,844	59,286
City of Corcoran	20,843	22,029	24,748	22,133	21,633
City of Wasco	21,263	23,666	25,533	26,205	27,028

Note: Population estimates and projections are not available from the California Department of Finance for unincorporated communities separate from the countywide population estimates and projections.

Sources:

a. DOF 2012.
b. DOF 2022.
c. DOF 2024a.

Housing

Table 3.15-2 outlines housing data for Fresno and Kings counties and the cities in the study area in 2024. Vacancy rates for these jurisdictions ranged from 1.5 percent (City of Mendota) to 7.8 percent (City of Coalinga). As of January 1, 2024, Fresno County had an estimated 349,217 housing units with a vacancy rate of 5.6 percent, and Kings County had an estimated 47,460 housing units with a vacancy rate of 5.3 percent.

TABLE 3.15-2
2024 HOUSING DATA ESTIMATES

	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate (percent)
Fresno County	349,217	329,640	19,577	5.6
Kings County	47,460	44,937	2,523	5.3
City of Fresno	190,078	181,528	8,550	4.5
City of Coalinga	4,658	4,293	365	7.8
City of Avenal	2,618	2,510	108	4.1
City of Huron	1,704	1,650	54	3.2
City of Mendota	2,926	2,883	43	1.5

	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate (percent)
City of Clovis	47,248	45,287	1,961	4.2
City of Reedley	7,628	7,380	248	3.3
City of Sanger	7,894	7,380	514	3.3
City of Fowler	2,398	2,303	95	4.0
City of Parlier	3,884	3,616	268	6.9
City of Selma	7,282	7,059	223	3.1
City of Kerman	4,973	4,869	104	2.1
City of San Joaquin	937	904	33	3.5
City of Firebaugh	2,365	2,255	110	4.7
City of Newman	3,765	3,338	427	2.6
City of Madera	18,765	18,227	538	2.9
City of Chowchilla	4,562	4,373	189	4.1
City of Merced	31,997	30,209	1,788	5.6
City of Dinuba	7,351	7,124	227	3.6
City of Visalia	50,951	48,973	1,978	3.9
City of Tulare	22,599	21,801	798	3.5
City of Lemoore	9,633	9,294	339	3.5
City of Corcoran	4,292	4,074	218	5.1
City of Hanford	20,713	19,989	724	2.9
City of Wasco	6,651	6,382	269	4.0

Source: DOF 2024b.

3.15.1.3 Regulatory Setting

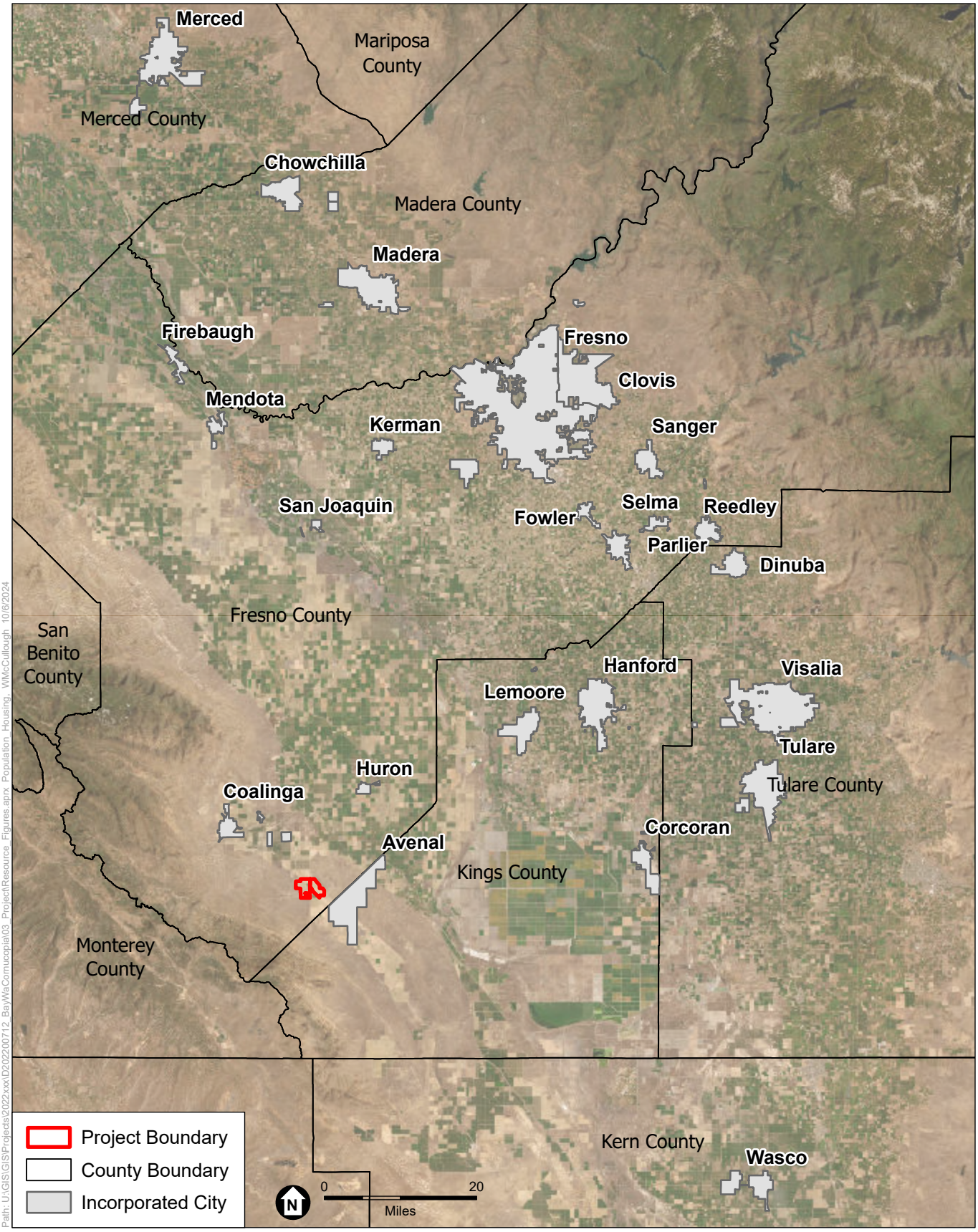
Federal

No federal statutes, regulations, plans, or policies govern population- and housing-related considerations that apply to the Project.

State

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission (CPUC) regulates activities undertaken by Pacific Gas and Electric Company (PG&E) and other investor-owned public utilities within the state. Therefore, the CPUC would have sole and exclusive jurisdiction over land use considerations related to PG&E's construction, operation, and maintenance of the PG&E infrastructure and improvements needed to connect the Project to the grid. PG&E's work (as regulated by the CPUC) would not be subject to Fresno County's land use–related requirements, including the County's governance of housing issues. However, CPUC General Order No. 131-E, §XI.B would require PG&E to "consult with local agencies regarding land use matters," potentially including any impacts related to population and housing.



Source: ESA, 2024; ESRI, 2024

Cornucopia Hybrid Project

Figure 3.15-1
Population and Housing

ESA

Regional

Fresno Council of Governments

The Fresno Council of Governments (Fresno COG) is a regional planning organization with representatives from Fresno County and its 15 incorporated cities. Fresno COG's primary responsibilities include transportation and housing planning. Fresno COG is the state-designated regional transportation planning agency and federally designated metropolitan planning organization for Fresno County (Fresno COG 2024). To fulfill its mandates, Fresno COG prepares regional transportation and housing plans for the County and cities, which includes periodically assessing potential population and housing growth and needs.

Fresno COG is responsible for preparing the regional housing needs allocation (RHNA) plan. An RHNA plan is a state-mandated document that determines the number of housing units each city and county is responsible for accommodating in the housing element of its general plan. The Fresno County RHNA Plan was last updated and approved in November 2022 (Fresno COG 2022). The planning period for the sixth cycle of the RHNA is from June 30, 2023, to December 31, 2031. The plan, which relies on data from the U.S. Census, California Department of Finance, and California Department of Housing and Community Development, as well as Fresno COG calculations, determined how to allocate future housing to Fresno County jurisdictions to accommodate expected population growth (Fresno COG 2022). Fresno County used the 2022 RHNA Plan to inform its 2023−2031 Housing Element.

Local

Fresno County General Plan

The Board of Supervisors adopted the updated Fresno County General Plan in February 2024; however, as of September 2024, the 2023−2031 Housing Element had not yet been adopted (Fresno County 2024). Accordingly, this analysis relies on the goals, policies, and implementation measures related to population and housing set forth in the 2015–2023 Housing Element, which was adopted in April 2016 (Fresno County 2016).

Relevant policies from Fresno County's adopted Housing Element 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

To balance the need to accommodate new renewable energy technology with the need to protect important farmlands and minimize impacts on existing agricultural operations, the County's land use process for evaluating solar facilities relies on flexible general guidelines and policies rather than specific standards. The Solar Facility Guidelines, adopted by the Fresno County Board of Supervisors in 2013 and revised in 2017, identify considerations to be evaluated as part of the County's process for permitting

solar facilities (Fresno County 2017). Multiple provisions of the Solar Facility Guidelines are relevant to this analysis of potential impacts related to population and housing, including the following:

- ***Guideline 12:*** 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.
- ***Guideline 14:*** 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.

See Section 3.12, *Land Use and Planning*, for details about Project consistency with other provisions of the Solar Facility Guidelines.

3.15.2 Significance Criteria

The Project would result in a significant impact related to population and housing if it would do any of the following:

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.

3.15.3 Direct and Indirect Effects

3.15.3.1 Methodology

This section discusses potential impacts on population and housing using Appendix G of the CEQA Guidelines. The Project would be regulated by the applicable laws, regulations, plans, and policies related to population and housing that are described in Section 3.15.1.3, *Regulatory Setting*.

3.15.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Criterion a) Whether the Project would 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).

Impact 3.15-1: The Project could directly or indirectly induce unplanned population growth in the area. (*Less-than-Significant Impact*)

Construction

A project could have a direct impact on population and housing resources if it would create substantial unplanned population growth in an area. Throughout the Project's 39-month construction schedule, a maximum of approximately 350 workers would be present during the solar module installation phases, with an average of approximately 200–250 construction workers per day. The construction workforce

would consist of laborers, craftspeople, supervisory personnel, support personnel, and vendors. It is anticipated that this staff would reside within the study area for the Project, which is the 75-mile radius surrounding the Project. Consistent with Items 12 and 14 of the County's Solar Facility Guidelines, the Applicant would make reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce and to purchase products and equipment from Fresno County manufacturing facilities and/or vendors. For the purposes of this EIR, *local* means the 75-mile study area surrounding the Project, which includes the cities and counties listed in Tables 3.15-1, 3.15-2, and shown in Figure 3.15-1.

Workers traveling from outside the "local" area could need housing accommodations if they are unable to commute a long distance. A small number of construction workers may choose to temporarily relocate near the Project site. However, any short-term lodging demand necessary to support construction workers could be accommodated by existing vacant housing units. Fresno County has a housing vacancy rate of 5.6 percent, which is approximately 19,577 vacant homes. Coalinga and Avenal are the nearest incorporated cities to the Project site. Coalinga has a vacancy rate of 7.8 percent with approximately 365 vacant homes and Avenal has a vacancy rate of 4.1 percent with approximately 108 vacant homes. Should construction workers be intent on staying near the Project area, housing would be available to accommodate them, in addition to available vacant housing in other incorporated cities within the study area. Therefore, existing vacant housing could accommodate the temporary influx of construction employees. Accordingly, the short-term population growth that could be caused by the Project's construction phase would have a **less-than-significant impact**.

Operation

Once construction is completed, on-site operation and maintenance (O&M) activities would occur only as scheduled or as needed. Six permanent employees would access the site for O&M activities. When additional technical support is required, a small crew of contracted technicians would be hired. Additionally, two professionally trained sheep herders would be present on-site during grazing season. Therefore, a small number of employees would be on-site at any given time during operation, leading to a minimal impact on the local population.

The Project would not include the development of new homes or businesses, so it would not directly induce permanent population growth in the Project area once operational. For these reasons, no direct population growth impacts would be associated with the Project.

The Project could have an indirect impact on population growth if it were to generate growth or produce a concentration of people beyond what is assumed in local and regional land use plans, or what is assumed in projections made by regional planning authorities. The Project would result in an increase in available and reliable electrical capacity for the region. Therefore, an indirect increase in the population could result from the additional availability of electrical capacity to the region. However, other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have more direct effects on growth. For these reasons, indirect operational impacts associated with population growth would be **less than significant**.

Decommissioning

Decommissioning activities that could lead to population and housing impacts would be similar to the construction activities described above. The workforce for decommissioning would be approximately 250–300 workers on-site, who would presumably be from the same study area as for construction. This could result in a temporary need for accommodation during decommissioning, should workers choose to stay in the local area instead of commuting longer distances. Any short-term lodging demands created during decommissioning would be accommodated by existing vacant housing units. Therefore, the potential short-term population growth that could be caused by the Project's decommissioning phase would have a **less-than-significant impact**.

Mitigation: None required.

Criterion b) Whether the Project would displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

The Project would be constructed on approximately 2,446 acres of privately owned land designated as Agriculture in the Fresno County General Plan and zoned as Exclusive Agricultural (AE), as discussed in Section 3.12, *Land Use and Planning*. The Project site has been used primarily for dry-farmed (unirrigated) agricultural production of wheat and grazing fodder. Implementation of the Project would not displace any residential housing units, nor would it displace people or any other structures that are occupied by people, as there are none within the Project site. Therefore, construction of the Project would have **no impact** associated with the displacement of people or the construction of replacement housing.

Project O&M would not displace any residential housing units, nor would it displace people or any other structures that are occupied by people. Therefore, Project O&M would have **no impact** associated with the displacement of people or the construction of replacement housing.

Decommissioning of the Project would not displace any residential housing units, nor would it displace people or any other structures that are occupied by people. Therefore, decommissioning of the Project would have **no impact** associated with the displacement of people or the construction of replacement housing.

Pacific Gas and Electric Company Infrastructure

Section 2.10, *PG&E Infrastructure*, in Chapter 2, *Project Description*, describes how PG&E would construct a switching station in the southeast corner of the Project site (see Figure 2-3). Construction and decommissioning of the PG&E infrastructure would not generate permanent jobs in the area. As with construction and decommissioning of the solar facility and ESS, if any construction workers were to temporarily relocate near the Project site, existing vacant housing could accommodate them. Therefore, construction or decommissioning of the PG&E infrastructure would not induce substantial unplanned population growth. The PG&E infrastructure construction would not create new roads or infrastructure that would directly result in substantial unplanned population growth. Therefore, there would be a **less-than-significant impact** related to inducement of substantial unplanned population growth from construction or decommissioning of the infrastructure and generation-tie line (gen-tie line) required for the Project. Similar to the solar facility and ESS components, the operations staff would include a small number of employees to perform maintenance work during normal business hours. The presence of these

permanent staff members would not constitute substantial growth. Therefore, there would be a **less-than-significant impact** related to inducement of substantial unplanned population growth from the O&M of the infrastructure and gen-tie line required for the Project.

The PG&E infrastructure would not displace any people or housing, because this portion of the Project would occur on the same privately owned land as the rest of the Project. The PG&E infrastructure would not displace any residential housing units, nor would it displace people or any other structures occupied by people. Therefore, there would be **no impact** related to displacement of existing people or housing from construction of the infrastructure and gen-tie line required for the Project.

Mitigation: None required.

3.15.4 Cumulative Analysis

As analyzed in Section 3.15.3.2, the Project would cause no impact related to the displacement of substantial numbers of existing people or housing, and thus would not necessitate the construction of replacement housing elsewhere. Accordingly, the Project would not cause or contribute to any potential significant cumulative impact related to criterion b).

Impact 3.15-2: The Project would not cause a cumulatively considerable contribution to a significant cumulative effect due to the inducement of unplanned population growth in the area. (*Less-than-Significant Impact*)

The geographic scope for the cumulative impacts associated with population and housing includes Fresno County and the cities of Avenal, Coalinga, and Huron. These jurisdictions are the nearest to the Project, where out-of-area construction workers would be most likely to relocate to shorten their commute times if needed, and therefore are the most likely areas to be affected by cumulative impacts of the Project. This analysis assumes full build-out of the projects listed in Section 3.1.3, *Cumulative Effect Approach*, and regional growth as forecast in adopted land use and housing plans. Fresno County, which includes the cities of Coalinga and Huron, is expected to undergo population growth in the next two decades. By 2035, the population of Fresno County is forecasted to increase from 1,007,344 in 2020 levels by 6.1 percent to 1,068,532 (DOF 2024a).

The projects listed in Section 3.1.3, *Cumulative Effect Approach*, are primarily energy or solar facility projects, which would add energy generation capacity to the electrical grid. Indirect effects related to population growth could occur as a result of increased capacity. However, the Project and these solar facilities are being implemented as a result of California's renewables portfolio standard requirements to offset carbon-based generation systems. Accordingly, these types of projects do not typically include or require components such as new housing, businesses, or infrastructure that could induce unplanned population growth. Additionally, they do not result in significant numbers of new, permanent employees. These projects, as well as other future developments, would be subject to the applicable city and/or county planning processes and environmental review on a project-by-project basis. However, these projects would not combine with the solar facility and ESS or the PG&E infrastructure to result in population growth that would be cumulatively considerable. Therefore, there would be a **less-than-significant cumulative impact** related to the inducement of substantial unplanned population growth.

Mitigation: None required.

3.15.5 References

DOF (California Department of Finance). 2012. *E-4 Population Estimates for Cities, Counties, and the State, 2001–2010, with 2000 & 2010 Census Counts*. Sacramento, CA. Version 1.3, revised November 9, 2012. Available: https://view.officeapps.live.com/op/view.aspx?src=https://dof.ca.gov/wp-content/uploads/sites/352/Forecasting/Demographics/Documents/E4_2000-2010_Report_Final_EOC_000.xlsx&wdOrigin=BROWSELINK. Accessed November 17, 2022.

DOF (California Department of Finance). 2022. *Report E-4: Population Estimates for Cities, Counties, and the State, 2011–2020, with 2010 Benchmark*. Demographic Research Unit. May 2, 2022. Available: https://view.officeapps.live.com/op/view.aspx?src=https://dof.ca.gov/wp-content/uploads/sites/352/Forecasting/Demographics/Documents/E-4_2010-2020InternetVersion.xlsx&wdOrigin=BROWSELINK. Accessed July 1, 2024.

DOF (California Department of Finance). 2024a. *Report E-1 & E1H, Population and Housing Estimates for Cities, Counties, and the State—January 1, 2023 and 2024*. Demographic Research Unit. Mayu 1, 2024. Available: https://dof.ca.gov/wp-content/uploads/sites/352/Forecasting/Demographics/Documents/E-1_2024_InternetVersion.xlsx. Accessed July 1, 2024.

DOF (California Department of Finance). 2024b. *E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2024*. Available: https://dof.ca.gov/wp-content/uploads/sites/352/Forecasting/Demographics/Documents/E-5_2024_InternetVersion.xlsx. Accessed July 1, 2024.

Fresno COG (Fresno Council of Governments). 2022. *Sixth Cycle Regional Housing Needs Allocation Plan*. Adopted November 2022. Available: https://fresnocog.wpenginepowered.com/wp-content/uploads/2022/11/FCOG_RHNP_Public_Review_Final_November_2022_Compiled.pdf. Accessed July 2, 2024.

Fresno COG (Fresno Council of Governments). 2024. "About COG." Available: https://www.fresnocog.org/about-cog/. Accessed July 2, 2024.

Fresno County. 2016. *Fresno Multi-Jurisdictional 2015–2023 Housing Element: A Regional Plan for Addressing Housing Needs*. Adopted April 2016. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/22903-chapter-1-introduction.pdf. Accessed September 20, 2024.

Fresno County. 2017. *Solar Facilities Guidelines*. Revised by Board of Supervisors December 12, 2017. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities/photovoltaic-facilities-p-1621. Accessed July 2, 2024.

Fresno County. 2024. *Fresno County General Plan Policy Document*. Final. February 2024. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-review-zoning-ordinance-update. Accessed August 20, 2024.

3.16 Public Services

This section evaluates the impacts of the Project on public services. It includes information about the environmental and regulatory setting and identifies 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 public services analyzed in this section include fire and police protection, schools, libraries, and medical providers. Parks and other recreational facilities are analyzed in Section 3.17, *Recreation*; see Section 3.17 for additional discussion of recreational facilities in the vicinity of the Project.

During the scoping period for the Draft EIR, written and oral comments were received from agencies, organizations, and the public. These comments identified various questions about the Project and suggestions related to the Draft EIR. Appendix A, *Scoping Report*, includes all comments received during the scoping period. No scoping comments pertaining to public services were received.

3.16.1 Setting

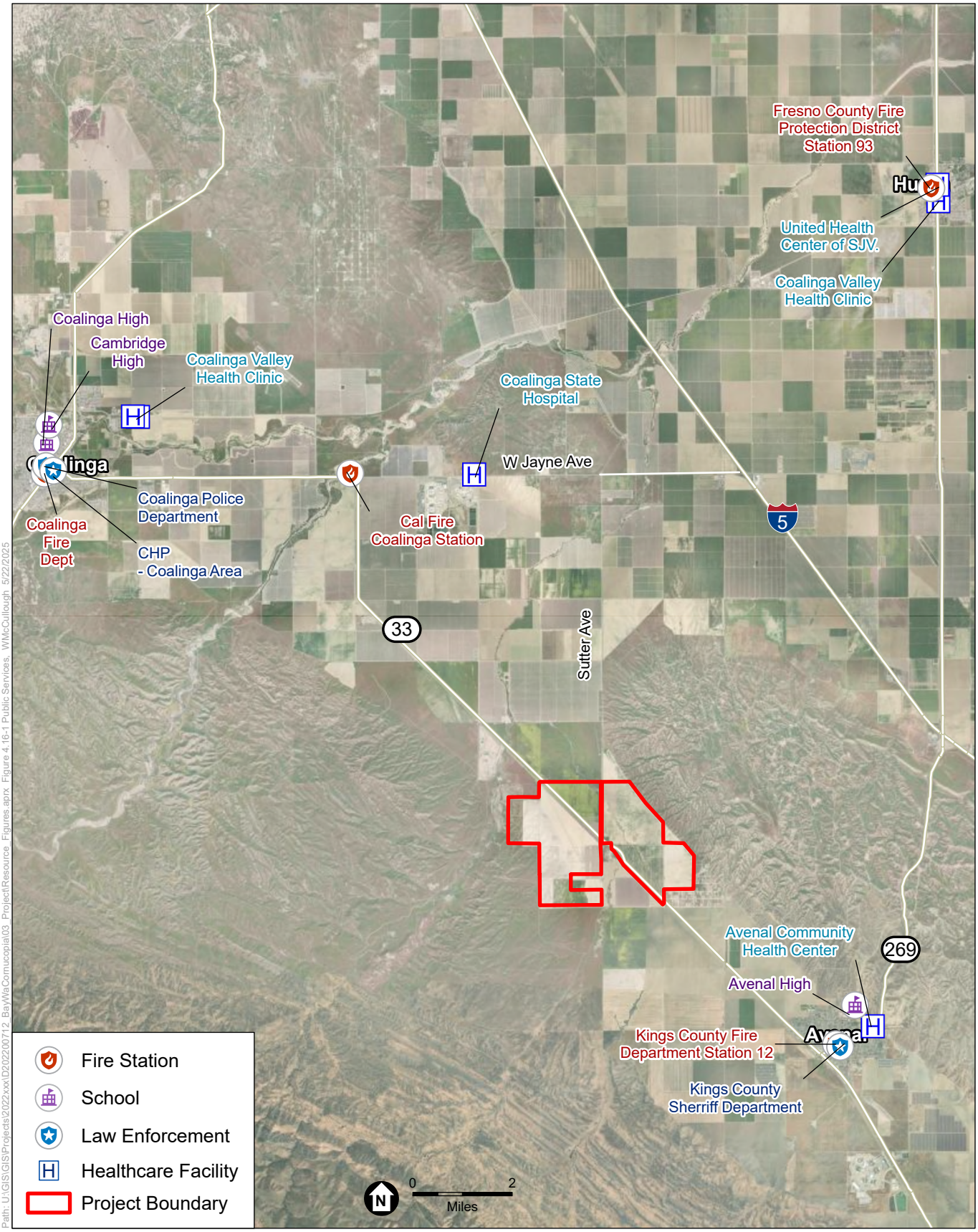
3.16.1.1 Study Area

The study area for the analysis of potential impacts on public services includes the service areas of fire protection, law enforcement services, and schools, parks, libraries, and medical providers that would serve the Project. The public services facilities serving these communities include fire departments, law enforcement, medical services, schools, and other public services facilities, as depicted in **Figure 3.16-1**, *Public Services*.

3.16.1.2 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 in a service area encompassing approximately 2,655 square miles in the communities of Tarpey Village, Calwa, Easton, Malaga, Del Rey, Caruthers, San Joaquin, Tranquillity, Prather, Friant, Wonder Valley, Cantua Creek, Three Rocks, Five Points, Tivy Valley, Sand Creek and the Cities of San Joaquin, Parlier, Mendota, Fowler and Huron (FCFPD 2024a). The FCFPD provides a full range of emergency response services, which include structural and wildland fire suppression, response to hazardous materials incidents, search and rescue, technical rescue, vehicle extrication, and basic life support medical services. The department employs a staff of 39. FCFPD emergency response personnel respond to more than 14,000 incidents annually, of which approximately 68 percent are medical incidents, for which the FCFPD provides Basic Life Support. The nearest FCFPD station is Station 93 in Huron, which is approximately 11 miles northeast (FCFPD 2024b). Most of the Project site falls within the jurisdiction of Battalion 14 of the CAL FIRE Fresno-Kings Unit, with the CAL FIRE Coalinga Station located approximately 8 miles from the Project site. The Battalion is responsible for over one million acres of state responsibility land under direct CAL FIRE protection and has 151,967 acres of Bureau of Land Management Direct Protection Area. The station is staffed with two Model 34 Type 3 engines, a Type 2 dozer and is the location of the Battalion headquarters (FCFPD 2025a). However, the nearest fire station to the Project site is the Kings County Fire Department Station 12 in the City of Avenal, located approximately 5 miles southeast of the Project site, that may assist with response in the event of an emergency.



Path: U:\GIS\GIS\Projects\2022xxx\D20220712 BayWaCornucopia\03 Project\Resource Figures.aprx Figure 4.16-1 Public Services WMcCullough 5/22/2025

Source: ESA, 2024; COES, 2024

Cornucopia Hybrid Project

Figure 3.16-1
Public Services

ESA

Police Protection

California Highway Patrol

The California Highway Patrol (CHP) is a law enforcement agency created in 1929 to provide uniform traffic law enforcement for the State of California. The CHP has jurisdiction over all interstates and state routes in the Project area including Interstate 5, State Route 33, and State Route 269. The Project area is served by the CHP Inland Division. The nearest office is in Coalinga at 125 6th Street, Coalinga, California (CHP 2024).

Fresno County Sheriff's Department

The Fresno County Sheriff's Department (FCSD) provides patrol services for more than 6,000 square miles. In 1983, patrol services were decentralized and divided into four patrol areas. Each area is commanded by a lieutenant who supervises field services from a substation located in each of the areas. The Project site is located in Area 1, which covers more than 2,400 square miles of western Fresno County. The area borders five different counties and has within its jurisdictional boundaries the incorporated cities of San Joaquin, Coalinga, Huron, Kerman, Mendota, and Firebaugh. In addition to the incorporated cities, Area 1 covers the unincorporated communities of Tranquillity, Biola, Five Points, Helm, Three Rocks, Cantua Creek, and Dos Palos (FCSD 2024a, 2024b).

Schools

The Project site is located within Coalinga-Huron Unified School District (CHUSD), which operates four elementary schools, two middle schools, and two high schools and serves nearly 5,000 students. Coalinga High School and Cambridge High School are the nearest schools in CHUSD, each approximately 10 miles from the Project site (CHUSD 2024).

Parks

There are a variety of recreational opportunities in Fresno County 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 are no parks or existing recreational facilities located on the Project site. The nearest park is Pleasant Valley Ecological Reserve, located approximately 4 miles to the northeast. Parks and other recreational resources are discussed further in Section 3.17, *Recreation*.

Libraries

There are two libraries near the Project site. Avenal Branch Library is located at 501 East Kings Street in Avenal, approximately 3.5 miles southeast from the nearest Project component. Coalinga-Huron District Library is the next nearest library, which is located at 305 N. 4th Street in Coalinga and 11 miles northwest from the Project site.

Hospitals and Medical Facilities

There are eight medical facilities near the Project site. Five are in Coalinga: Aria Community Health Coalinga, Adventist Health Medical Offices, and West Hills Medical Group, all approximately 9.5 miles from the nearest Project component; and Coalinga Regional Medical Center and Coalinga Valley Health Clinic, each approximately 9 miles northwest of the Project site. The remaining three medical facilities

near the Project are in Avenal. These facilities are Adventist Health Medical Office and Family Medicine, Pediatrics: Adventist Health, approximately 3.5 miles southeast of the Project, and Avenal Community Health Center: Reich Nilza M DO, approximately 3.75 miles southeast of the Project site.

3.16.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies pertaining to the provision of public services are applicable to the Project.

State

California Education Code

The following policies in the California Education Code pertain to public schools (California Education Code 2021):

> ***Section 8241.***
>
> *Until the Superintendent of Public Instruction promulgates regulations for center-based programs establishing staffing ratios, the following staffing ratios shall apply:*
>
> *(a) Infants, 0 to 2 years old—1:3 adult-child ratio, 1:18 teacher-child ratio.*
>
> *(b) Infants and toddlers, 0 to 2 years old—1:4 adult-child ratio, 1:16 teacher-child ratio.*
>
> *(c) Children 3 to 6 years old—1:8 adult-child ratio, 1:24 teacher-child ratio.*
>
> *(d) Children 6 to 10 years old—1:14 adult-child ratio, 1:28 teacher-child ratio.*
>
> *(e) Children 10 to 13 years old—1:18 adult-child ratio, 1:36 teacher-child ratio.*
>
> *(f) If groups of children of varying ages are commingled, the teacher and adult ratios shall be proportionate and appropriate to the ages and groups of children.*

Public Utilities Code

The following policies in the Public Utilities Code pertain to public services (Public Utilities Code 2024):

> ***Section 761.3***
>
> *(g) (1) In order to ensure the safety of employees, emergency responders, and surrounding communities, each battery energy storage facility located in the state and subject to subdivision (a) shall have an emergency response and emergency action plan that covers the premises of the battery energy storage facility, consistent with Sections 142.3 and 6401 of the Labor Code and any related regulations, including the regulatory requirements applicable to emergency action plans pursuant to Section 3220 of Title 8 of the California Code of Regulations.*
>
> *(2) The emergency response and emergency action plan shall do all of the following:*
>
> > *(A) Establish response procedures for an equipment malfunction or failure.*
> >
> > *(B) Include procedures that provide for the safety of surrounding residents, neighboring properties, emergency responders, and the environment. These procedures shall be established in consultation with local emergency management agencies.*

(C) Establish notification and communication procedures between the battery energy storage facility and local emergency management agencies.

(3) The emergency response and emergency action plan may do all of the following:

(A) Consider responses to potential offsite impacts, including, but not limited to, poor air quality, threats to municipal water supplies, water runoff, and threats to natural waterways.

(B) Include procedures for the local emergency response agency to establish shelter-in-place orders and road closure notifications when appropriate.

(4) In developing the emergency response and emergency action plan, the owner or operator of the battery energy storage facility shall coordinate with local emergency management agencies, unified program agencies, and local first response agencies.

(5) The owner or operator of each battery energy storage facility shall submit the emergency response and emergency action plan to the county and, if applicable, the city where the facility is located.

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County General Plan

The Public Facilities and Services Element of the Fresno County General Plan contains goals, policies, and implementation program measures to ensure that public facilities and services are adequately available and accessible in a timely fashion to serve new development (Fresno County 2024).

The following goal within Section A, Public Facilities and Services Element pertains to the Project:

> **Goal PF-A:** To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.

The following goals and policies in Section G, *Law Enforcement*, of 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 and 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.1:*** The County shall ensure the provision of effective law enforcement services to unincorporated areas in the county.
>
> ***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.)

The following goals and policies in Section H, *Fire Protection and Medical Services*, of the Public Facilities and Services Element 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.

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 and services acceptable to the Public Works and Planning Director in consultation with the appropriate fire district are provided.

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 California 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 goal and policies in Section I, *Schools and Library Facilities*, of 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 in Section H of the Open Space and Conservation Element 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.

Fresno County Fire District Strategic Financial Plan 2025–2030

The FCFD's 2025-2030 Strategic Financial Plan identifies the operational needs of the District over the next 5 years, and the capital improvements necessary to support those needs. The Plan considers the need for development impact fees to support additional fire facilities and equipment to serve new development in the County (FCFPD 2025). Any such development impact fees would require the County Board of Supervisors' approval prior to taking effect. However, if the Fire District proposes and the Board of Supervisors adopts development impact fees addressing fire services, then the Cornucopia Hybrid Project may be subject to those fees. This would result in the Project making fair share payments supporting additional fire services in the County and in the area surrounding the Project site.

The Cornucopia Hybrid Project is planning to begin operations in 2029. If the current property tax exclusion under California Revenue and Taxation code section 73 sunsets on January 1, 2027, then the Project would not be subject to solar property tax exclusions, which will provide significant funds to support public services, including additional fire services.

3.16.2 Significance Criteria

The Project would result in a significant impact related to public services if it would do any of the following:

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, and
    v. Other public facilities.

3.16.3 Direct and Indirect Effects

3.16.3.1 Methodology

This section discusses potential impacts on public services as guided by Appendix G of the CEQA Guidelines. It is assumed that the Project would comply with applicable federal, state, and local laws and regulations, and governing agencies and institutions would be expected to continue to enforce applicable requirements to the extent that they do so currently. Furthermore, this section relies on analysis provided in Section 3.15, *Population and Housing*.

3.16.3.2 Direct and Indirect Effects of the Project

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.

Solar Facility and Energy Storage System

Fire Protection

Construction and Decommissioning

Project construction could result in emergency situations that require emergency response services, including fire protection, such as fires, severe injuries, or medical emergencies. However, with the implementation of proper safety precautions, such situations would be infrequent and limited and would not generate demand for fire protection services. Temporary lane closures or traffic delays during delivery of large pieces of equipment during construction activities could result in delays that could affect emergency response times; however, such delays would not require the construction of new or altered facilities to provide adequate fire protection services. Project construction activities would temporarily increase traffic in the Project vicinity due to construction worker vehicle and equipment trips. The trip increase could temporarily affect the demand for fire protection and emergency response services if, for example, a motor vehicle or construction equipment accident occurs. However, this potential temporary increase in vehicle and equipment trips would not sufficiently increase demand such that new emergency response facilities would need to be constructed, or that existing facilities in the Project area would need to be expanded.

Accordingly, the Project would not result in substantial adverse physical impacts associated with the 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, emergency response, or other public services. Additionally, the project site would have a functional well or water storage tanks available for use during an emergency response, if needed. These fire protection measures, among others, would be fully detailed in technical fire safety documents, which will be approved prior to issuance of a building permit. Furthermore, the Project would be consistent with General Plan policies as stipulated in Section 3.16.1.3, *Regulatory Setting*. See Section 3.10, *Hazards and Hazardous Materials*, and Section 3.18, *Transportation*, for additional discussion of potential Project effects on emergency service provider access related to construction lane closures and Mitigation Measure 3.10-1, which details the construction traffic management plan.

It is anticipated that construction of the Project would take approximately 39 months and require an average of approximately 200–250 workers on any given day, with an estimated 350 workers required during the peak of solar installation. It is anticipated that this staff would reside in the Fresno Metropolitan Service Area (MSA), which consists of Fresno and Madera counties, or the Bakersfield MSA, which consists of Kern County, with workers expected to commute to the site rather than relocate. Some increase in temporary population could occur with workers residing in the local area during the workweek and returning home on weekends. However, because construction activities would be limited

in duration and the workforce is expected to commute to the site from their residences in the Fresno MSA, no permanent increase in population associated with this work is expected. Construction would not increase short-term demand for fire protection services such that new or physically altered facilities would be required.

Decommissioning of the Project would have impacts on fire protection services similar to those of construction. The workforce for decommissioning would consist of an average of approximately 250–300 workers on-site, who are assumed to be from the same MSAs as for construction. As with construction, this could result in a temporary need for accommodation during construction, if workers were to engage in "weekly commuting" (staying in the local area during the work week and returning home on weekends). These short-term lodging demands created during decommissioning would not increase short-term demand for fire protection services such that new or physically altered facilities would be required. Therefore, there would be **no impact** on fire protection services during construction or decommissioning.

Operation

As described in Section 3.20, *Wildfire*, the risk that the Project would ignite a fire is low, and the Project is not expected to exacerbate wildfire risks. Multiple fire safety measures would be implemented to avoid potential fire risks such as compliance with the California Fire code, fire safety systems, and maintenance of internal firebreaks. Once the Project is constructed, the number of workers on-site may range from none (it is not necessary for staff to be present during plant operations) to 22 during periodic, routine maintenance or repair events, and two professionally trained sheepherders for the grazing sheep during the grazing season. Intermittent additional support personnel may include between 6 to 22 workers to perform maintenance activities (such as panel washing) and occasional facility repairs, as needed. Non-routine (emergency) maintenance could require additional workers. Furthermore, the local fire protection facilities (described in Section 3.16.1.2, *Environmental Setting*) that would serve the Project in an emergency are already in place and would not change because of the Project. Any increase in the demand for services would be rare, negligible, and insufficient to affect standard response times or require redress by the construction of new or physically altered law enforcement or other emergency response-related facilities. For these reasons, O&M of the Project would not require construction of new or physically altered fire protection facilities to maintain acceptable service ratios, response times, or other performance standards. There would be **no impact** on fire protection services during Project operation.

Law Enforcement

Construction and Decommissioning

Potential law enforcement service effects would be limited primarily to the construction period. Temporary lane closures or traffic delays during delivery of large pieces of construction equipment during construction activities could affect law enforcement response times, but not to the extent that the construction of new or altered facilities would be necessary to provide law enforcement services. See Impact 3.18-4, in Section 3.18, *Transportation*, for the Project's effects on emergency service provider access due to construction-related lane closures.

Law enforcement services response may be required in the event of vandalism, theft, or a trespasser at a Project site. Security lighting and fencing would reduce instances of crime and the associated need for law enforcement services. Although the Project may result in increased demand for law enforcement services, such an increase would be negligible. Therefore, the Project would not require construction of

new or physically altered law enforcement facilities to maintain acceptable service ratios, response times, or other performance standards.

Similar to construction, decommissioning of the Project would have limited effects on police or sheriff's services. The workforce for decommissioning would be approximately 250–300 workers on-site, who are assumed to be from the same MSAs as for construction. Again, this could result in a temporary need for accommodation during decommissioning, if workers were to engage in "weekly commuting" (staying in the local area during the work week and returning home on weekends). These short-term lodging demands created during decommissioning would not increase short-term demand for police or sheriff protection services such that new or physically altered facilities would be required. Therefore, for these reasons there would be **no impact** on law enforcement services during Project construction or decommissioning.

Operation

The Project could result in an impact on police or sheriff's services if its operation would require additional law enforcement resources. Although the Project may result in increased demand for law enforcement services, such an increase would be negligible. Therefore, the Project would not require construction of new or physically altered law enforcement facilities to maintain acceptable service ratios, response times, or other performance standards. There would be **no impact** on law enforcement services during Project operation.

Schools

Construction and Decommissioning

As discussed previously, Project construction is estimated to result in the employment of a maximum of 350 workers at the peak of construction. It is anticipated that these workers would commute to the Project site from the Fresno MSA, which consists of Fresno and Madera counties, or the Bakersfield MSA, which consists of Kern County. This could result in a temporary need for accommodation during construction, if workers were to engage in "weekly commuting" (staying in the local area during the work week and returning home on weekends). These short-term lodging demands created during construction would not increase short-term demand for school services such that new or physically altered facilities would be required. Therefore, it is not expected that the Project construction workforce would relocate school-age children into the service areas of the school districts in the Project vicinity. The Project would not result in a substantial increase in demand for school facilities and would not require the construction of a new school or modification of an existing school, the construction of which could cause significant environmental effects.

Similar to construction, decommissioning of the Project would also not affect or require construction of new schools. The workforce for decommissioning would average approximately 250–300 workers on-site, who are assumed to be from the same MSAs as for construction. As discussed previously, this could result in a temporary need for accommodation during construction, if workers were to engage in "weekly commuting" (staying in the local area during the work week and returning home on weekends). These short-term lodging demands created during decommissioning would not increase short-term demand for school protection services such that new or physically altered facilities would be required. Therefore, there would be **no impact** on school services during Project construction or decommissioning.

Operation

As discussed in Section 3.15, *Population and Housing*, the Project would not result in substantial increases in the local population or demand for permanent housing, which typically are associated with an increased demand for public school services. Therefore, the Project would not result in a substantial increase in demand for school facilities and would not require the construction of a new school or modification of an existing school, the construction of which could cause environmental effects. There would be **no impact**.

Parks

As described in Section 3.17, *Recreation*, which evaluates the Project's potential to cause accelerated deterioration of park facilities, the Project would not require the construction of new parks or modification of existing parks, nor would construction, operation, or decommissioning alter or impair the use of parks. Furthermore, the Project would not increase demand for parks, nor would the Project require the creation of additional parks to maintain service ratios. Therefore, there would be **no impact**.

Other Public Facilities

The Project would not result in substantial adverse impacts to other public facilities (e.g., public libraries, hospitals, or other civic uses) because, as discussed previously, the Project would not result in a notable increase in local population or housing, which would typically be associated with increased demand for such public facilities. Although unlikely, it is possible that Project construction could result in a minor increased use of other types of public services such as medical facilities and libraries. However, such increases would not be substantial and would not require the construction of new public facilities or modification of existing public facilities, the construction of which could cause significant environmental effects. There would be **no impact**.

Impact Conclusion

Construction, operation, and decommissioning of the solar facility and energy storage system would not involve the deterioration or alteration of any governmental facilities, nor would it require the construction of additional governmental facilities to maintain any performance objectives. Therefore, the construction, operation, and decommissioning of the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; nor would it create the 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. (*No Impact*)

Pacific Gas and Electric Company Infrastructure

As described in Section 2.10, *PG&E Infrastructure*, in Chapter 2, *Project Description*, Pacific Gas and Electric Company (PG&E) would construct a switching station in the southeast corner of the Project site (see Figure 2-3), located directly adjacent to the Project substation. The substation would connect to PG&E's high-voltage 230-kilovolt switching station by a new generation-tie line, which may be up to 200 feet in length.

With construction of the PG&E infrastructure and generation-tie line required for the Project, there would be no 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. For the reasons described above, there would be no impacts under criterion a) from the PG&E infrastructure. (*No Impact*)

3.16.4 Cumulative Analysis

As stated in Section 3.16.3.2, *Direct and Indirect Impacts of the Project*, there would be no impacts on public services attributable to the Project's solar facilities and energy storage system or PG&E infrastructure. Therefore, there could be no incremental impacts that would be cumulatively considerable, and there would be **no cumulative impact** on public services associated with the Project.

3.16.5 References

California Education Code. 2021. California Legislative Information. Available: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=8241. Accessed on August 8, 2024.

CHP (California Highway Patrol). 2024. California Highway Patrol. Available: https://www.chp.ca.gov/home/about-us. Accessed November 25, 2024.

CHUSD (Coalinga-Huron Unified School District). 2024. About. Available: https://www.chusd.org/page/about. Accessed August 6, 2024.

FCFPD (Fresno County Fire Protection District). 2024a. About Us. Available: https://www.fresnocountyfire.org/about-us. Accessed July 3, 2024.

FCFPD. 2024b. District Operations. Available: https://www.fresnocountyfire.org/district-operations. Accessed September 16, 2024.

FCFPD. 2025a. Fresno Kings unity Battalion 14. https://www.fresnocountyfire.org/fresno-kings-unit-battalion-14. Accessed May 15, 2025.

FCFPD. 2025b. *Strategic Financial Plan*. https://www.fresnocountyfire.org/files/4f9103ddb/Strategic+Financial+Plan+2025-2030.pdf. March 2025. Accessed December 23, 2025.

FCSD (Fresno County Sheriff's Department). 2024a. Patrol Areas. Available: https://www.fresnosheriff.org/units/enforcement/patrol-areas.html. Accessed August 20, 2024

FCSD. 2024b. Area 1. Available: https://www.fresnosheriff.org/units/enforcement/patrol-areas/area-1.html. Accessed August 14, 2024.

Fresno County. 2024. *Fresno County General Plan Policy Document. General Plan Review*. Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed September 16, 2024.

Google Earth. 2025. Search term: “Fire departments in Fresno County near Avenal.” Accessed May 13, 2025.

Public Utilities Code. 2024. California Senate Bill 38. Available: https://legiscan.com/CA/text/SB38/id/2844405. Accessed August 26, 2024.

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3.17 Recreation

This section identifies and evaluates potential impacts on neighborhood and regional parks and other recreational facilities. It describes the physical and regulatory setting, identifies the criteria used to evaluate the significance of potential impacts, describes the methods used to evaluate potential impacts, and shows the results of the impact assessment. The County received no scoping comments regarding Recreation (Appendix A, *Scoping Report*).

3.17.1 Setting

3.17.1.1 Study Area

The study area for the analysis of potential impacts on recreation resources 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.

3.17.1.2 Environmental Setting

Recreational opportunities within Fresno County include city parks, regional parks, state parks, federal lands, and wilderness areas. There are no recreational resources within the Project site or within 3 miles of the Project site; the majority of recreational resources are located within the eastern portion of the county (Fresno County 2024). **Table 3.17-1** lists the parks and recreational facilities within an approximately 15-mile radius of the Project site and **Figure 3.17-1** visually displays the distances from these recreational facilities to the Project site.

TABLE 3.17-1
RECREATIONAL FACILITIES NEAREST TO THE PROJECT SITE

Managing Agency	Recreational Facility	Approximate Distance from Project Site
Federal		
U.S. Bureau of Land Management (BLM)	Curry Mountain	15 miles northwest
State		
California Department of Fish and Wildlife (CDFW)	Pleasant Valley Ecological Reserve	4 miles north
Local		
City of Avenal	Floyd D. Rice Park	3.5 miles southeast
City of Avenal	Avenal Neighborhood Park	3.5 miles southeast
City of Avenal	Sand Drag	4.5 miles southeast
City of Avenal	Avenal Sports Complex	5 miles southeast
Fresno County Planning & Resource Management Department	California Aqueduct Trail	6.5 miles northeast
Fresno County Planning & Resource Management Department	Los Gatos Creek Trail	10 miles northwest
Coalinga-Huron Recreation and Park District	George E. Olsen Memorial Park	9 miles northwest
Coalinga-Huron Recreation and Park District	Centennial Park	9.5 miles northwest
Coalinga-Huron Recreation and Park District	Keck Park	10 miles northwest
Coalinga-Huron Recreation and Park District	Coalinga-Huron Sports Complex	10.5 miles northwest

Managing Agency	Recreational Facility	Approximate Distance from Project Site
Coalinga-Huron Recreation and Park District	Keenan Park	10.5 miles northeast
Coalinga-Huron Recreation and Park District	Huron Community Park	11 miles northeast
Coalinga-Huron Recreation and Park District	Chestnut Park	11 miles northeast
Private		
Private	Polvadero Country Club	4 miles north

Sources: BLM 2024a; CDFW 2024; City of Avenal 2005; Coalinga-Huron Recreation and Park District 2024; Fresno County 2024.

Federal Recreation Resources

The U.S. Bureau of Land Management's Central Coast field office manages approximately 284,000 acres of public land in Central California, including isolated parcels near the Project site (BLM 2024b). The BLM land near the Project is approximately 1 mile north and 0.5 miles east within the Diablo Mountain Range. The closest federal recreational site is the Curry Mountain Recreation Area, located approximately 15 miles northwest of the Project site. The main recreational uses at this site are hiking and hunting quail, chukar, small game, deer, and wild pigs (BLM 2024a).

State Recreation Resources

There is one California Department of Fish and Wildlife ecological reserve near the Project site that is used for recreation. Pleasant Valley Ecological Reserve is 1,200 acres and offers recreational opportunities such as wildlife viewing and deer hunting (CDFW 2024). The Project would be located 4 miles south of Pleasant Valley Ecological Reserve.

Local Recreation Resources

Fresno County

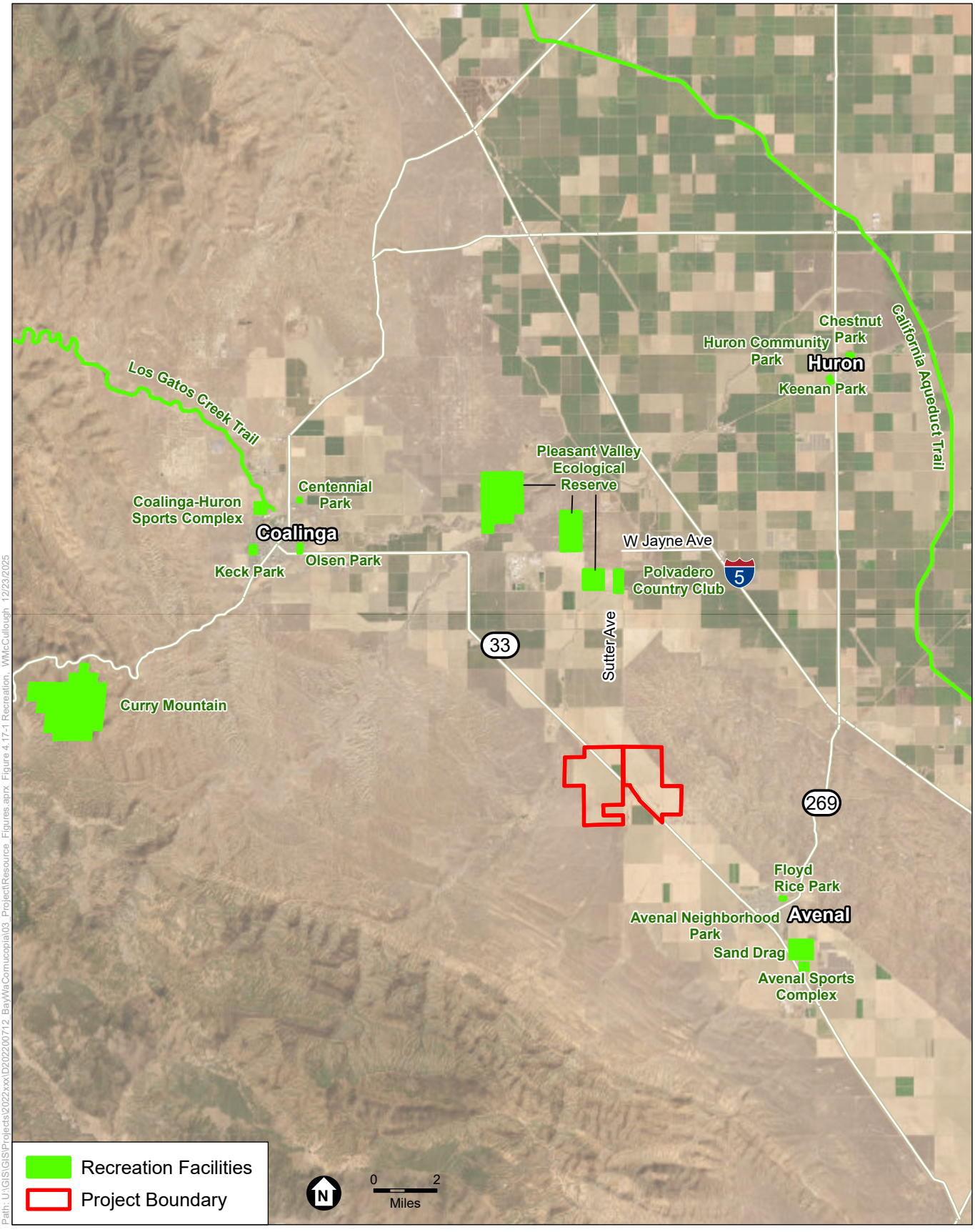
The Fresno County Resources and Parks Division manages two recreational facilities within 15 miles of the Project site: the California Aqueduct Trail and the Los Gatos Creek Trail. Both of these facilities offer hiking opportunities. They are located approximately 7 and 10 miles northwest of the Project site, respectively.

City of Coalinga

Several parks in the city of Coalinga are within 15 miles of the Project site, such as Coalinga-Huron Sports Complex, Keenan Park, George E. Olsen Memorial Park, Centennial Park, and Keck Park. These parks are northwest of the Project site and offer recreational facilities for sports, picnics, and nature access. They are managed by the Coalinga-Huron Recreation and Park District (2024).

City of Huron

Two parks in the city of Huron are within 15 miles of the Project site: Chestnut Park and Huron Community Park. These parks are northeast of the Project site and offer recreational facilities for sports, picnics, and nature access. They are managed by the Coalinga-Huron Recreation and Park District (2024).



Source: ESA, 2024; CPAD, 2021

Cornucopia Hybrid Project

Figure 3.17-1
Recreation Facilities Near the Project Site

ESA

City of Avenal

Several parks in the city of Avenal are within 5 miles of the Project site, such as Avenal Neighborhood Park, Floyd D. Rice Park, and Avenal Sports Complex. These facilities are northwest of the Project site and offer recreational amenities for sports, picnics, and nature access. They are managed by the Avenal Community Activities Department (City of Avenal 2005).

Additionally, there is a sand drag racing track in the southern part of the city, called Sand Drag LLC. The facility offers 300 feet of drag racing facilities, timing services, concessions, and classes. The facility is approximately 4 miles southeast of the Project site (Sand Drag 2024).

3.17.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern recreation-related considerations on the Project site.

State

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County General Plan

The Fresno County General Plan's Open Space and Conservation Element discusses policies to enhance recreational opportunities in the county. Section H, Parks and Recreation, contains policies that promote the provision of recreational resources, including specifically within the western portion of the county:

> **Goal OS-H:** To designate land for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.
>
> > ***Policy OS-H.6:*** The County shall encourage the development of parks near public facilities such as schools, community halls, libraries, museums, prehistoric sites, and open space areas and shall encourage joint-use agreements whenever possible.
> >
> > ***Policy OS-H.13:*** The County shall encourage the development of recreation facilities in western Fresno County.

Additionally, Policy OS-H.2 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 2024).

3.17.2 Significance Criteria

The Project would result in a significant impact related to recreation if it would do any of the following:

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.

3.17.3 Direct and Indirect Effects

3.17.3.1 Methodology

The Project's proposed location and components were reviewed relative to the location and types of parks and recreational facilities within an approximately 15-mile radius of the Project site to determine whether Project-caused changes to the physical environment would be significant.

3.17.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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.

The usage of recreational facilities is often correlated with the number of people that live nearby, particularly when residents can walk to the facilities (National Recreation and Park Association 2024). If a population increases near recreational facilities, it can be assumed that the use of those facilities would consequently increase. If the population remains the same but the number of available recreational facilities is reduced, then the remaining facilities may see increased usage due to fewer recreation options being available to the population. Section 3.15, *Population and Housing*, demonstrates that the Project would not significantly increase the population directly or indirectly.

Construction

The construction phase of the Project is planned to last for approximately 3 years with a maximum of 350 workers during the solar module installation phases. The average number of workers on-site at any time is anticipated to be approximately 200–250. Section 3.15, *Population and Housing*, articulates that these personnel would be sourced from the local employment pool and would not generate a population influx. The nearest recreational facilities that construction workers could use would be 3.5 miles away in the city of Avenal. Even if some workers were to use the recreational facilities during their lunch breaks or non-working hours, this use would represent a marginal temporary increase because it is anticipated that the vast majority of workers would stay on-site for lunch or would not regularly travel to nearby cities to use their recreational facilities. Therefore, there would be no impact on recreational facilities caused by the limited use by construction personnel.

Operation

Once construction is completed, on-site operation and maintenance (O&M) activities would occur as scheduled or as needed, as described further in Section 2.1, *Project Overview*. Up to 22 workers for O&M and two professionally trained sheepherders may be on-site. Even if all of the workers were to use the recreational facilities at one time for an event, the facilities would be able to accommodate this increase because they are equipped with existing amenities such as picnic areas, barbeque grills, and sports courts that are designed for groups and parties. This would not result in any impact on recreational facilities, because there would be a negligible increase in recreational facility usage by O&M personnel.

Decommissioning

The workforce for decommissioning would be approximately 250–300 workers on-site, assumed to be from the same areas as for construction. Again, it is unlikely that construction workers would use parks during their lunch breaks or non-working hours, because the nearest recreational facilities are 3.5 miles away in the city of Avenal. However, even if some workers were to use the recreational facilities during their lunch breaks or non-working hours, the limited use would not result in accelerated physical deterioration of these parks. Therefore, **no impact** on recreational facilities would be caused by the limited use by decommissioning personnel. (*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.

Recreational facilities are not included as components of the solar facility and energy storage system (ESS). Additionally, the solar facility and ESS would not indirectly induce a substantial population increase (as discussed in Section 3.15) and would not require the construction or expansion of additional recreational facilities, so the solar facility and ESS would not result in any need for additional recreational facilities to be constructed. Therefore, **no impact** would occur as a result of construction, operation, or decommissioning of the solar facility and ESS.

Pacific Gas and Electric Company Infrastructure

The specifics of the PG&E infrastructure components of the Project are described in Section 2.10, *PG&E Infrastructure*. The number of construction, O&M, and decommissioning workers for the PG&E infrastructure would be included in the total number of construction personnel discussed previously, with similar commute patterns within the local labor pool area. Deterioration of existing recreational facilities would not be accelerated if used by workers assigned to the PG&E infrastructure components of the Project.

Recreational facilities are not included as components of the PG&E infrastructure portion of the Project. Additionally, the PG&E infrastructure would not indirectly induce a substantial population increase (as discussed in Section 3.15, *Population and Housing*) and would not require the construction or expansion of additional recreational facilities. The PG&E infrastructure would not result in any need to construct additional recreational facilities. Therefore, **no impact** would occur as a result of construction, operation, or decommissioning of the PG&E infrastructure under criterion a) or b). The Project as a whole, including the PG&E infrastructure, would have no impact on recreational resources. (*No Impact*)

3.17.4 Cumulative Analysis

As stated in Section 3.17.3.2, *Direct and Indirect Impacts of the Project*, there would be no impacts on recreational resources attributable to the solar facility and ESS or PG&E infrastructure. Therefore, there could be no incremental impacts that would be cumulatively considerable, and there would be **no cumulative impact** on recreation associated with the Project.

3.17.5 References

BLM (U.S. Bureau of Land Management). 2024a. "Curry Mountain." Available: https://www.blm.gov/visit/curry-mountain. Accessed June 18, 2024.

BLM (U.S. Bureau of Land Management). 2024b. "Central Coast Field Office." Available: https://www.blm.gov/office/central-coast-field-office. Accessed June 19, 2024.

CDFW (California Department of Fish and Wildlife). 2024. "Pleasant Valley Ecological Reserve." Available: https://wildlife.ca.gov/Lands/Places-to-Visit/Pleasant-Valley-ER. Accessed June 18, 2024.

City of Avenal. 2005. City of Avenal General Plan Policies Statement. Chapter 3.0, "Conservation, Open Space, Parks and Recreation Element." Adopted August 11, 2005. Available: https://www.cityofavenal.com/370/General-Plan. Accessed June 19, 2024.

Coalinga-Huron Recreation and Park District. 2024. "Parks and Facilities." Available: https://chrpd.org/parks/. Accessed June 18, 2024.

Fresno County. 2024. *Fresno County General Plan Policy Document*. Final. February 2024. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/general-plan-review-zoning-ordinance-update. Accessed June 18, 2024.

National Recreation and Park Association. 2024. *Parks and Recreation in Underserved Areas: A Public Health Perspective*. Available: https://www.nrpa.org/uploadedfiles/nrpa.org/publications_and_research/research/papers/parks-rec-underserved-areas.pdf. Accessed September 30, 2024.

Sand Drag. 2024. "Avenal Sand Drags." Available: https://www.avenalsanddrags.com/index.php. Accessed June 19, 2024.

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3.18 Transportation

This section identifies and evaluates issues related to transportation consisting of the circulation system, vehicle miles traveled (VMT) as contemplated in CEQA Guidelines §15064.3(b), roadway hazards, and emergency access. 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 a community member regarding transportation resources. The commenter expressed concerns regarding access to the dirt roads that lead from State Route (SR) 33 to private properties in the unincorporated Fresno County community of Lost Hills, located adjacent to the Project site. She asked whether alternative routes would be implemented by the Project to enable property owners to continue to have unimpeded access to their properties (Appendix A, *Scoping Report*).

This analysis is based on the *Trip Generation—Distribution and Vehicle Miles Traveled (VMT) Analysis* prepared by VRPA Technologies, Inc. (**Appendix M**). The preparers of this Draft EIR independently reviewed the trip generation analysis (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.

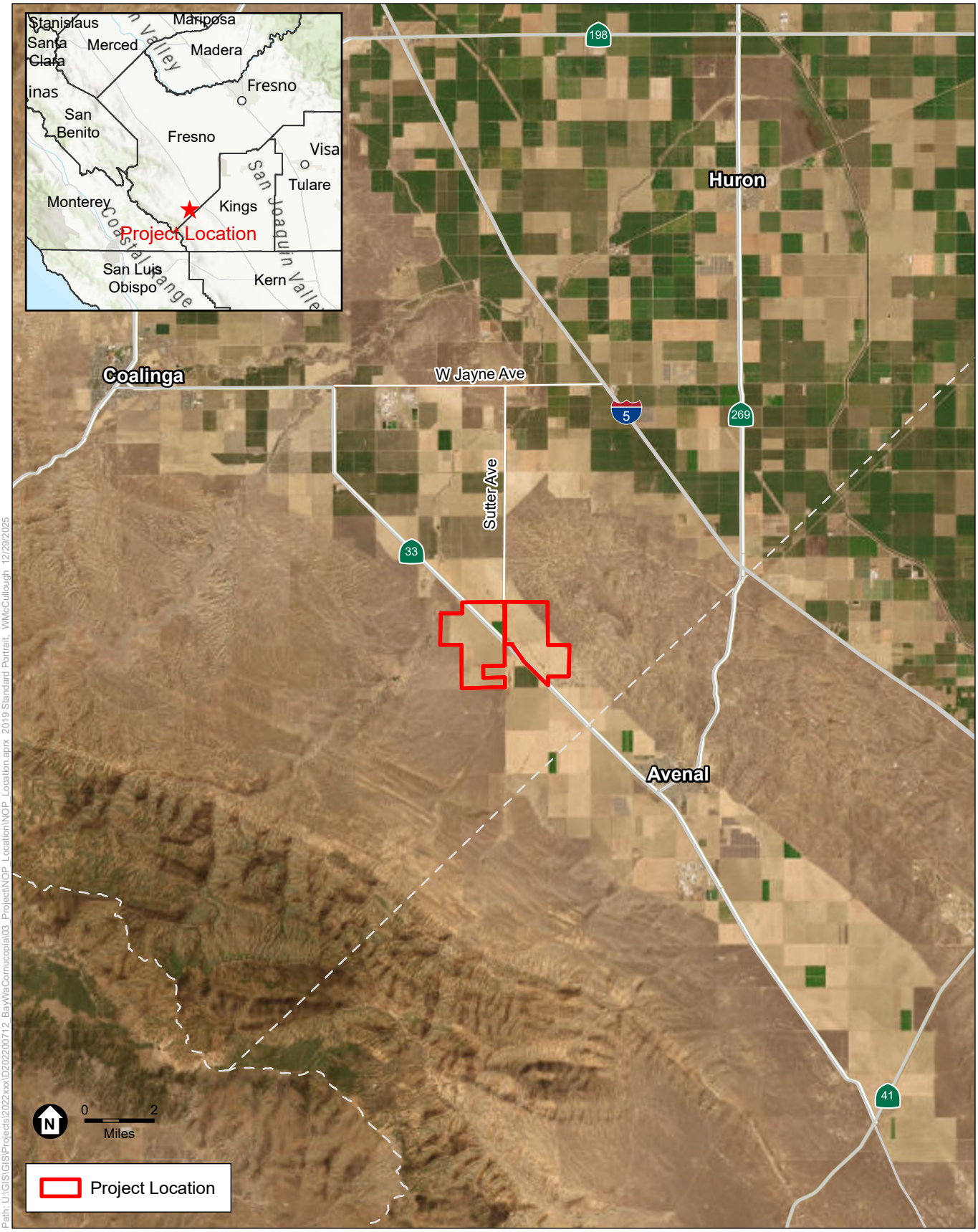
3.18.1 Setting

3.18.1.1 Study Area

The Project site is located in unincorporated western Fresno County, approximately 4 miles west of Interstate 5 (I-5). The northwest-to-southeast SR 33 (South Lost Hills Road) and the north-to-south Sutter Avenue both bisect the Project site. Access to the Project site would be provided by the existing roadway network described below in Section 3.18.1.2, *Environmental Setting*. Primary access from the public roadway network would be from SR 33 and Sutter Avenue, as shown in **Figure 2-5**, *Project Access Points*. The transportation study area includes all nearby roadways where Project construction, operation and maintenance, and decommissioning activities would add vehicle trips. 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).

3.18.1.2 Environmental Setting

The environmental setting includes transportation facilities that would be used to access the Project site, which includes major highways and local roadways, public transportation, and nonmotorized transportation. **Figure 3.18-1**, *Major Highways and Local Roads*, shows the locations of the transportation facilities discussed in this section.



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Source: ESA, 2024

Cornucopia Hybrid Project

Figure 3.18-1
Major Highways and Local Roads

ESA

Major Highways

SR 33 is a two-lane undivided highway that provides a connection between the communities of Coalinga and Avenal. Dedicated turn lanes are generally provided from SR 33 to nearby intersections. Vehicle trips generated by the Project are expected to arrive from and depart to areas north and south of the Project site via West Jayne Avenue and SR 33. Vehicle trips generated by the Project are expected to arrive from and depart to areas south of the Project site via SR 41 and SR 33. The average daily traffic (ADT) volume on SR 33 in the vicinity of the Project site is approximately 1,850 vehicles, with up to approximately 200 vehicles during the peak traffic hour (Caltrans 2022).

I-5 is a north-south interstate highway that extends from the U.S. border with Mexico to the Canadian border and provides access for goods movement, shipping, and travel. Access to the Project site from I-5 is provided via interchanges at West Jayne Avenue and SR 41. The ADT volume on I-5 between West Jayne Avenue and SR 269 is approximately 41,500 vehicles, with up to approximately 5,200 vehicles during the peak traffic hour (Caltrans 2022).

Local Roads

Sutter Avenue is a two-lane undivided local road that provides a connection from West Jayne Avenue in Coalinga, approximately 11 miles northwest of the Project site, and leads to a network of unpaved local roads at the southeast corner of the Project site. From SR 33, about 0.15 mile of Sutter Avenue would be traversed by vehicle trips generated by the Project.

Public Transportation

Public transportation in the areas closest to the Project site in Fresno County is provided by the Fresno County Rural Transit Agency/Coalinga Inter-City Transit, which provides scheduled round-trip service from Coalinga to the Fresno-Clovis metropolitan area with stops in Coalinga, Huron, Five Star, Five Points, Lanare, Riverdale, Arnolds, Caruthers, Raisin City, and Easton along the route. Service is available Monday through Saturday from 8:00 a.m. to 5:45 p.m. (FCRTA 2024). A portion of this service operates on West Jayne Avenue approximately 5 miles north of the Project site but does not provide access via a bus stop. The closest bus stop is located approximately 11.8 miles north of the Project site on SR 198 (West Elm Avenue) in Coalinga.

Public transportation in the areas closest to the Project site in Kings County is provided by Kings Area Regional Transit/Bus Route 12-Avenal (out-of-town route), which provides scheduled round-trip service from Avenal to Hanford with stops in Kettleman City, Stratford, and Lemoore along the route. Service is available Monday through Friday from 6:15 a.m. to 7:10 p.m. and Saturday from 8:45 a.m. to 4:50 p.m. (KART 2021). A portion of this service operates on SR 33 approximately 5.5 miles south of the Project site but does not provide access via a bus stop. The closest bus stop is located approximately 5 miles south of the Project site at the corner of West San Joaquin Street and Thurston Avenue.

Nonmotorized 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, Sutter Avenue, and West Jayne Avenue. The Fresno County Regional Bicycle and Recreational Trails Master Plan identifies a planned 14.5-mile Class II Bikeway on West Jayne Avenue between SR 33 and the Fresno County/Kings County line, which

would run approximately 5 miles north of the Project site.[1] Bicycle facilities on paved shoulders are commonly found on rural roads without curbs and sidewalks. Shoulder bikeways provide a paved location for bicyclists to travel outside of the travel lane (Fresno County 2013).

3.18.1.3 Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern transportation-related considerations on the Project site.

State

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 the potential transportation and traffic impacts of the Project:

California Vehicle Code, Division 15, Chapters 1–5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Streets and Highways Code, §§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.

California Public Utilities Commission General Order No. 131-E. The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Local

Fresno County General Plan

The Transportation and Circulation Element of the Fresno County General Plan provides the framework for County decisions concerning the countywide transportation system, which includes various transportation modes and related facilities (Fresno County 2024). It also provides for coordination with the cities and unincorporated communities within the county, with the Regional Transportation Plan (RTP) adopted by the Fresno Council of Governments (Fresno COG) (2022), and with federal and state 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.2—Vehicle Miles Traveled (VMT) Standards and CEQA Evaluation:*** The County shall require evaluation of County General Plan land use designation changes, zone changes, and discretionary development for their individual (i.e., project-specific) and cumulative

[1] This planned bicycle facility is not identified as a priority because of environmental, right-of-way, or jurisdictional issues (*Table VI–Other Unranked Candidate Projects*).

transportation impacts based on VMT under the California Environmental Quality Act (CEQA) pursuant to the methodology and thresholds of significance criteria established by the County.

Policy TR-A.3—Level of Service: The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the County.

Policy TR-A.4—Roadway Access: 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.6—Rights-of-way Dedications: 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.9—Development Impact Fee: 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.10—Roadway Improvements: 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.

Policy TR-A.14—Multi-modal Transportation System: The County where appropriate, shall coordinate the multi-modal use of the streets and highways to ensure their maximum efficiency and connectivity and shall consider the need for transit, bikeway, and recreational trail facilities when establishing the Ultimate Right-of-way Plan and Precise Plans of street and highways.

Policy TR-A.15—Bikeways and Trails: The County shall develop and maintain a program to construct bikeways and recreation trails in accordance with the adopted Regional Bicycle and Recreational Trail Master Plan. The County shall seek funding for construction and maintenance of bicycle facilities and trails.

Policy TR-A.25—Vehicle Miles Traveled (VMT) Threshold: Projects that would generate or attract more than 110 daily vehicle trips shall be evaluated for a transportation VMT impact on an individual basis. The threshold of significance shall be 87 percent below the countywide average rate of VMT. Any individual project resulting in VMT that exceeds 87 percent below the countywide average shall be required to implement project-specific mitigation measures aimed at reducing VMT generated by the project.

Coalinga Regional Plan

The Coalinga Regional Plan outlines objectives and policies applicable specifically to the southwestern portion of Fresno County, as identified in the Fresno County General Plan. The transportation element of the Regional Plan includes descriptions and objectives of the regional circulation system, public transit system, rail transportation system, and air transportation system. The plan was adopted by the Fresno

County Planning Commission on August 29, 1974, and adopted by the Fresno County Board of Supervisors on December 10, 1974. The descriptions and objectives listed in the transportation element define consistency with the Fresno County General Plan (Fresno County 1974).

Fresno County Regional Bicycle and Recreational Trails Master Plan

The Fresno County Department of Public Works and Planning adopted the Regional Bicycle and Recreational Trails Master Plan to establish a framework for future development of Fresno County's bicycle and recreational trail network and makes the County eligible for federal, state, and local 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 2024).

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 Fresno County's regional nonmotorized transportation system with adjoining counties; and identifies barriers that inhibit safe and convenient nonmotorized travel and includes a list of corrective measures to remove the barriers.

Fresno County Regional Active Transportation Plan

The Fresno COG adopted the Fresno County Regional Active Transportation Plan in 2018. The 2019 plan was developed to create a comprehensive guide outlining the vision for biking, walking, and other human-powered transportation in Fresno County and a road map for achieving that vision. The updated Fresno County Regional Active Transportation Plan was approved by the Fresno COG on May 30, 2024, and reflects projects that have been newly identified, modified, or completed since the release of the first plan. It includes updated information on disadvantaged communities and safety data, current land use and plans in each city and the county, and updates to reflect best active transportation planning practices (Fresno COG 2024).

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. The 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 Code of Federal Regulations Title 23, §§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 2017).

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 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) and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways.

CEQA Guidelines §15064.3(b) was adopted in December 2018. It requires lead agencies to evaluate transportation impacts based on a VMT approach and no longer allows the use of vehicle delay and LOS to determine the significance of a transportation impact for purposes of CEQA. Because the CMP is focused solely on vehicle delay and LOS transportation metrics, it is not the focus of the analysis of transportation impacts in this evaluation.

3.18.2 Significance Criteria

The Project would result in a significant impact related to transportation if it would do any of the following:

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 §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.

3.18.3 Direct and Indirect Effects

3.18.3.1 Methodology

Trip Generation

To assess any potential impacts of the Project on the surrounding roadway network, the first step is to determine Project trip generation. Trip generation was analyzed separately for construction of the Project and operation of the site. Project construction trip generation was based on peak levels of construction activity using the following methodology:

- It is expected that there would be one inbound and one outbound trip per worker, with 25 percent of the workers being passengers in carpools. This leads to a trip generation of 450 inbound and 450 outbound trips per day, or a total of 900 daily trips.
- Morning (a.m.) and evening (p.m.) peak-hour trips for autos were based on the Manufacturing category (Land Use Code 140) from the Institute of Transportation Engineers' *Trip Generation Manual* (11th Edition).
- Truck trip generation and a.m. and p.m. peak-hour trip generation for automobiles was based on the Manufacturing category (Land Use Code 140) from the Institute of Transportation Engineers' *Trip Generation Manual* (11th Edition). The number of trips was assumed to be the same as for a manufacturing facility that generates 900 daily trips.
- Truck trips are often analyzed in terms of passenger car equivalents (i.e., the number of passenger car trips that would be equal to one truck trip for capacity analysis purposes). For the Project, passenger car equivalents were determined using a standard passenger car equivalent of 3.0, which is typical for large trucks.

Once the Project is in operation, it is expected to include the following activities:

- Operation of the site would include six employees who would visit the site occasionally to perform maintenance functions.
- In addition, during grazing season the Project site would be used to graze sheep.
- Sheep grazing would require eight round-trip truck trips to the site to deliver sheep at the beginning of the season and eight round-trip truck trips to remove sheep at the end of the grazing season. In addition, two sheepherders are expected to travel to the site on a daily basis.

Trip Distribution

Project trip distribution is shown in Exhibit 4 of Appendix M. Trips were distributed to the roadway system based on the analysis of potential origins and destinations of construction traffic and prevailing traffic patterns. The resulting Project traffic daily, a.m. peak-hour, and p.m. peak-hour traffic is expressed in passenger car equivalents.

Vehicle Miles Traveled

Senate Bill (SB) 743 went into effect throughout California on July 1, 2020. This legislation changed the performance measure for CEQA transportation studies from LOS to VMT.

Many agencies throughout California have prepared or adopted specific guidelines for VMT analysis to meet the requirements of SB 743. For agencies that do not have their own guidelines, typical practice is to use statewide guidance for VMT analysis. The California Governor's Office of Land Use and Climate Innovation (LCI) (formerly Governor's Office of Planning and Research) provided a guidance document on VMT analysis titled *Technical Advisory on Evaluating Transportation Impacts in CEQA*, dated December 2018 (LCI Guidelines). Because Fresno County does not have specific guidance for VMT analysis, this analysis relies on the LCI Guidelines.

It should be noted that the Fresno COG has completed a document titled *Fresno County SB 743 Implementation Regional Guidelines*, dated January 2021, that provides guidance on VMT analysis conducted within the Fresno COG region (including the unincorporated area of Fresno County). This guidance is advisory only and individual agencies within the county may choose whether to follow the Fresno COG's guidance or use some other methodology for VMT analysis. Fresno County has not approved the use of the Fresno COG guidance.

It should also be noted that truck trips are excluded from VMT analysis per the LCI Guidelines. Therefore, the VMT analysis that follows applies only to employee trips.

3.18.3.2 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

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.

The Project would have no impact related to a conflict with a program, plan, ordinance, or policy addressing transit, bicycle, or pedestrian facilities. (*No Impact*)

Construction—Public Transit, Bicycle, or Pedestrian Facilities

Construction of the Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, nor would it 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, such as Policies TR-A.4 and TR-A.10 described above. 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 nonmotorized transportation systems and identify barriers to trails and bikeways: the Regional Bicycle and Recreational Trails Master Plan and the Fresno County Regional Active Transportation Plan, as described above.

The Project would be consistent with 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 in the Fresno County General Plan's Transportation and Circulation Element as an "existing or planned bikeway." Similarly, the Project site would not introduce a barrier to nonmotorized travel because of the proposed lack of roadway improvements. Therefore, the Project would not decrease the performance or safety of public transit, bicycle, or pedestrian facilities because there are no facilities in the affected area. The Project would not conflict with adopted policies, plans, or programs supporting alternative transportation. Therefore, no impact on transit, bicycle, or pedestrian facilities would occur.

Operation and Maintenance: Circulation system as a whole, including transit, roadway, bicycle, and pedestrian facilities

Operation and maintenance activities would occur over a 35-year period, which corresponds to the anticipated operational life of the Project. As stated previously, the Project would generate approximately 12 daily trips on average during operation and maintenance. The addition of such a small number of vehicles to the roadway network would not have a significant effect on roadway operations. Operation and maintenance activities would not conflict with any regulations addressing the circulation system such as those that govern surrounding transit, roadway, pedestrian, and bicycle facilities. Project operation would therefore have no impact.

Closure, Decommissioning, and Site Restoration: Circulation system as a whole, including transit, roadway, bicycle, and pedestrian facilities

Decommissioning impacts would be relatively similar to those identified for Project construction. Implementing Mitigation Measure 3.10-1, as described below, would reduce potential conflicts with programs, ordinances, or policies during this phase to a level of no impact because vehicle access on roadways adjacent to the Project site would be safely maintained and delays caused by additional Project-related traffic would be eliminated.

Impact 3.18-1: Construction of the Project could conflict with a program, plan, ordinance, or policy addressing the circulation (roadway) system. (*Less than Significant with Mitigation Incorporated*)

As described in Chapter 2, *Project Description*, construction would occur over 39 months, with up to 350 workers accessing the site during peak construction. Construction traffic would result in short-term but substantial increases in traffic volumes on surrounding roadways. With the addition of Project-related construction vehicle traffic to existing roadway volumes without a corresponding increase in the capacity of the roadway, the potential exists for a temporary reduction of roadway capacities, increased congestion, and increased potential for conflicts with vehicles slowly entering or exiting public roadways at Project driveways, all of which could conflict with County congestion management standards and therefore result in a potentially significant impact. To address the increased potential for traffic impacts from construction traffic, a construction traffic management plan would be put in place through implementation of **Mitigation Measure 3.10-1**, which would reduce potential conflicts related to construction traffic.

> **Mitigation Measure 3.10-1: Construction Traffic Management Plan.** At least 30 days before the issuance of construction or building permits, the Project owner and/or its construction contractor shall prepare and submit a traffic management plan to the Fresno County Public Works Department and Caltrans District 6, as appropriate, for approval. The traffic management plan must be prepared in accordance with both the Caltrans *Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook* and must include, but not be limited to, the following elements:
>
> - A temporary traffic control 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.
> - Identification of the timing of deliveries of heavy equipment and building materials and duration of proposed road closures or obstructions.
> - A requirement for designated construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed.
> - A 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 and to advise of alternate routes.
> - Measures to ensure access for emergency vehicles to the Project site.
> - Maintenance of access to adjacent properties.
> - Specification of construction-related vehicle travel and oversize-load haul routes, minimization of construction traffic during the a.m. and p.m. peak hours, distribution of

construction traffic flow across alternative routes to access the Project site, and avoidance of residential neighborhoods to the maximum extent feasible.

- A requirement to obtain all necessary permits for the work within the road right-of-way or the use of oversized/overweight vehicles that would use County-maintained roads, which may require escort by the California Highway Patrol or a pilot car. Copies of the approved traffic plan and issued permits shall be submitted to the Fresno County Divisions of Public Works and Planning.
- A requirement that, prior to the Project's Commercial Operation Date (COD), the Applicant will ensure that Sutter Avenue between Jayne Avenue and SR 33 (Lost Hills Road) is promptly repaired utilizing crack seal and chip seal methods. The Applicant will pull required permits for road improvement and crack and chip seal during this time. The full width of all construction entrances shall be grinded to a depth of 0.3 foot and replaced with hot mixed asphalt for the full width of roadway prior to the chip seal application. The Applicant will pull a no fee encroachment permit from the County of Fresno for maintenance and repair of the roads during the construction phase.

Significance after Mitigation: Less than Significant. Mitigation Measure 3.10-1 provides a plan that would be implemented during Project construction and would ensure that vehicle traffic is controlled while also taking into account existing vehicle traffic. Implementing Mitigation Measure 3.10-1 would reduce potential vehicle conflicts, thus limiting potential Project conflicts with County congestion standards (General Plan Policy TR-A.3). Therefore, Project impacts on roadways related to conflicts with any programs, plans, ordinances, or policies addressing the circulation system would be mitigated to less than significant with implementation of Mitigation Measure 3.10-1.

Criterion b) Whether the Project would conflict or be inconsistent with CEQA Guidelines §15064.3(b).

Impact 3.18-2: The Project would not conflict or be inconsistent with CEQA Guidelines §15064.3(b). (*Less-than-Significant Impact*)

Construction

While the Project would generate a substantial number of trips, this would be only during construction, which is anticipated to take approximately two years. Consistent with CEQA Guidelines §15064.3(b), Project construction is analyzed qualitatively for the purposes of VMT considerations. Construction of the Project as a whole (proposed solar facility and energy storage system [ESS] as well as the Pacific Gas and Electric Company [PG&E] infrastructure) would result in a maximum of 1,200 daily vehicle trips. However, in a no-build condition, it would be reasonable to assume that the construction workers who would have built the Project would be employed elsewhere on different project sites. Based on lack of evidence to the contrary, this analysis assumes that the no-build condition would include construction trips and VMT generation similar to what would occur if the Project were built. Further, the maximum of 1,200 daily construction trips would be temporary. For instance, with a construction period of 12 months, the equivalent period of VMT generation would be less than 5 percent of a permanent residential, office, or retail use that would be developed at the same time as the Project and would be in place through the Fresno County regional planning horizon year of 2046. Construction of the Project would result in less-than-significant direct and indirect VMT impacts.

Operation and Maintenance

Once construction of the proposed solar facility, ESS, and PG&E infrastructure is complete and regular operations have started, traffic levels associated with operation and maintenance of these Project components would not be large enough to require an analysis of traffic operations or VMT. During regular operations, the proposed solar facility would include six employees on-site. These employees would be expected to generate 12 daily trips. There would be a maximum of 22 intermittent additional support workers on-site at one time during operations, for a total of 44 daily trips. According to the LCI's Technical Advisory (2018), any project generating fewer than 110 trips per day can be presumed to have a less-than-significant impact on VMT; therefore, no mitigation measures related to VMT are necessary.

Closure, Decommissioning, and Site Restoration

As described in Section 2.8, *Decommissioning and Site Reclamation*, in Chapter 2, Project decommissioning would consist of the removal of all aboveground structures and belowground structures, as well as overall restoration of the site. As discussed above regarding direct and indirect VMT impacts from Project construction, vehicle trips from closure, decommissioning, and restoration would be temporary. Therefore, the impact related to VMT for all Project components 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 3.18-3: 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 with Mitigation Incorporated*)

The Project's solar facility or ESS components would not include design features or use vehicles with incompatible uses that would create a hazard on the roadways surrounding the Project site.

Construction, operation, and emergency access to the Project site would be provided from SR 33 (state-owned) and Sutter Avenue (county-owned), both paved public roads. Access off SR 33 would be pursuant to a County Emergency Services Department determination confirming the necessity of such access, and County and Caltrans approval of a traffic management plan and necessary permitting. A traffic management plan addressing construction traffic would be implemented in accordance with Mitigation Measure 3.10-1. Implementation of Mitigation Measure 3.10-1 would reduce conflicts related to construction traffic and fulfill Caltrans' requirements.

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.10, ensuring that corner sight distance requirements would be followed. These design and construction requirements would ensure that Project components would not increase transportation-related hazards. Additionally, site access points would comply with requirements set forth by the California Department of Forestry and Fire Protection or the Fresno County Fire Protection District to ensure appropriate access design. Further, within the Project site, a network of access roads would provide access between and among the various Project components, totaling approximately 30 miles of

access roads altogether. Direct and indirect impacts from construction, operation, and maintenance associated with transportation-related hazards resulting from a Project geometric design feature or incompatible uses would be less than significant with mitigation incorporated.

Closure, Decommissioning, and Site Restoration

Traffic characteristics during decommissioning and restoration would be similar to the construction phase, in that this phase would require the transport of heavy equipment and facility materials, some of which may require transport by oversize vehicles. Any such vehicles would comply with permit-related and other requirements of the California Vehicle Code and California Streets and Highway Code. These vehicles are not anticipated to cause hazards to other roadway users during the 10- to 12-month decommissioning period. Impacts would be less than significant.

Mitigation Measure 3.10-1: Construction Traffic Management Plan

Significance after Mitigation: Less than Significant. Mitigation Measure 3.10-1 provides a plan that would be implemented during Project construction and would address construction-related traffic. Implementing Mitigation Measure 3.10-1 would address traffic safety and control through the work zone, thus limiting potential hazards from construction vehicle access along SR 33. Therefore, Project impacts on roadways related to hazards resulting from a Project geometric design feature or incompatible uses would be mitigated to less than significant with implementation of Mitigation Measure 3.10-1.

Criterion d) Whether the Project would result in inadequate emergency access.

Impact 3.18-4: The Project would result in adequate emergency access. (*Less-than-Significant Impact*)

As described in Section 2.2 of Chapter 2, *Project Description*, I-5 and SR 33 provide regional access to the Project site, while Sutter Avenue provides local access. Emergency access would also be provided from Sutter Road. The Applicant also proposes emergency access on SR 33, pursuant to County Emergency Services Department determination confirming the necessity of such access, and County and Caltrans approval of a traffic management plan and necessary permitting. As described in Section 2.5.1.4 and shown on Figure 2-5 in Chapter 2, multiple ingress/egress points would be available, including for emergency vehicles, off of SR 33 and Sutter Avenue. Both SR 33 and Sutter Avenue are paved public roads. All site access points would comply with requirements set forth by the California Department of Forestry and Fire Protection or the Fresno County Fire Protection District to ensure adequate emergency access. Additionally, road improvements required by the Fresno County Maintenance and Operations Division would be implemented before operation. No road closures are planned as part of Project construction, operation, or decommissioning.

As described under Impact 3.10-4, all designated access roads would provide sufficient emergency access. However, additional traffic during the construction or decommissioning phases may affect SR 33, which could have a significant impact on potential evacuation routes in an emergency. A potentially significant impact would occur if the additional traffic would affect the ability of emergency vehicles to circulate to and from the site. However, emergency vehicles would be able to adequately bypass Project traffic through the multiple points of ingress/egress available to the site, and the internal access road

network. Therefore, emergency access would be maintained through all Project phases, and the impact would be less than significant.

Pacific Gas and Electric Company Infrastructure

Construction, operation and maintenance, and decommissioning-related traffic would be included in the description of the solar facility and ESS traffic described above. Traffic specific to the PG&E infrastructure would be a small component of the overall Project-related traffic. Construction of the PG&E infrastructure would not conflict with adopted policies, plans, or programs regarding the circulation system, nor would it result in inadequate emergency access, for the same reasons described for the solar facility and ESS components. Implementation of PG&E's standard applicant proposed measures and best management practices would ensure that the PG&E infrastructure work itself would not pose any potentially significant impacts. The PG&E Infrastructure would have less-than-significant impacts with respect to criterion a) and a less-than-significant impact with respect to criterion d).

Construction, operation and maintenance, and decommissioning-related VMT for the PG&E infrastructure were assessed as part of the Project as a whole. The Project as a whole would have a less-than-significant impact with respect to criterion b); therefore, the PG&E infrastructure would have a less-than-significant impact as well.

The Project's PG&E infrastructure components would not include a design feature or use vehicles with incompatible uses that would create a hazard on the roadways surrounding the Project site. All Project site access points would conform with Fresno County and California Department of Forestry and Fire Protection safety standards. Therefore, there would be a less-than-significant impact under criterion c).

3.18.4 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 on transportation from the start of construction through the conclusion of decommissioning and site restoration activities. The geographic scope of the cumulative effects analysis includes the study area described in Section 3.18.1.1 and considers each of the roads and roadway segments that could be affected by the Project (e.g., Sutter Avenue, SR 33).

The cumulative analysis includes past, present, and reasonably foreseeable future actions that make up the cumulative scenario. The ongoing impacts of past projects are accounted for as part of baseline conditions for the Project. Specifically, a past project that continues to contribute to traffic in the Project area is the Fifth Standard Solar Project, which could contribute to traffic on SR 269, as it is located approximately 6 miles northeast of the Project site. However, given its distance from the Project site, including its location on the opposite side of I-5, 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 between the Fifth Standard facility and the Project site. Other projects to be considered in the analysis of cumulative Project transportation impacts are identified in Table 3.1-1, *Cumulative Projects List*, and are discussed in Section 3.1.3.1, *Cumulative Scenario*.

As a preliminary matter, and as analyzed in the context of significance criterion a) in Section 3.18.3.2, the Project would have no impact related to a conflict with a program, plan, ordinance, or policy addressing

the circulation system, including transit, bicycle, and pedestrian facilities. Accordingly, the Project could not cause or contribute to any potential significant cumulative effect on such facilities.

Impact 3.18-5: Implementation of the Project would not result in a cumulative and significant conflict with a program, plan, ordinance, or policy addressing the circulation system, including roadway facilities. (*Less than Significant with Mitigation Incorporated*)

As described in Section 3.18.3.2, *Direct and Indirect Effects of the Project*, the Project's incremental impacts regarding conflicts with regulations addressing the circulation system, including roadway facilities, would be less than significant with implementation of Mitigation Measure 3.10-1.

Regarding past, present, and reasonably foreseeable future projects in the vicinity of the Project site, there would be no potential for the Project to contribute to a cumulative conflict with programs, plans, ordinances, or policies addressing the circulation system. As described in Impact 3.18-1, with the addition of Project-related construction vehicle traffic to existing roadway volumes without a corresponding increase in the capacity of the roadway, the potential exists for a conflict with County congestion management standards, which could result in a potentially significant impact. However, at the cumulative level, there does not currently exist a conflict with County congestion management standards that could result in a physical environmental impact. Therefore, the Project would not have the potential to contribute to any existing cumulative impact, and implementation of Mitigation Measure 3.10-1 at the Project level would further ensure that this is true. The cumulative impact would be less than significant. Construction-related traffic for the PG&E improvements would use the same access points as the remainder of the Project; therefore, the PG&E improvements would also have a less than significant cumulative impact.

Impact 3.18-6: Implementation of the Project would not result in a cumulative and significant conflict with CEQA Guidelines §15064.3(b). (*Less-than-Significant Impact*)

Similar to the Project, cumulative projects in the vicinity of the Project would be required to be consistent with the Fresno County General Plan. Consistency with the General Plan, which includes policies related to the analysis of VMT, would address any potential cumulative impact. As described in Section 3.18.3.2, *Direct and Indirect Effects of the Project*, the Project's incremental impacts regarding a conflict with CEQA Guidelines §15064.3(b) would be less than significant. Because VMT modeling and the measure of VMT per capita are conducted within a regional context, the Project's contribution to cumulative impacts on VMT would be the same as its Project-level VMT impact. There currently does not exist a potentially significant cumulative VMT impact. Therefore, the Project would not have a cumulatively considerable contribution to regional VMT, and this impact would be less than significant. For the same reasons, the PG&E improvements would not have a cumulatively considerable contribution to regional VMT, and this impact would be less than significant.

Impact 3.18-7: Implementation of the Project would not result in a cumulative and significant increase in 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*)

As described in Section 3.18.3.2, *Direct and Indirect Effects of the Project*, the Project's incremental impacts regarding an increase in hazards due to geometric design features or incompatible uses would be less than significant with incorporation of Mitigation Measure 3.10-1.

A cumulatively considerable impact would result from the Project if the Project's components, in combination with surrounding projects, would create a hazardous feature or incompatible use in the surrounding community. Because the nearest project is 3.5 miles southeast of the Project site, there would be no project design features that would interfere with the proposed solar facility, ESS, and PG&E infrastructure. Any construction-related oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and California Streets and Highway Code. Further, there would be no improvements to existing transportation systems that would be implemented as part of the Project that could cause hazardous conditions in the Project vicinity. As a result, the cumulative impact would be less than significant. For the same reasons, the PG&E improvements would not cause hazardous conditions in the Project vicinity and the cumulative impact would be less than significant.

Impact 3.18-8: Implementation of the Project in combination with cumulative development would not result in a cumulative and significant lack of adequate emergency access. (*Less-than-Significant Impact*)

Each project listed in Table 3.1-1, *Cumulative Projects List*, would adhere to requirements set forth by the California Department of Forestry and Fire Protection or the Fresno County Fire Protection District to ensure adequate emergency access. There would be no cumulatively significant impact related to adequate emergency access.

As described in Section 3.18.3.2, *Direct and Indirect Effects of the Project*, the Project's incremental impact regarding a lack of adequate emergency access would be less than significant at the Project level.

None of the projects listed in Table 3.1-1, *Cumulative Projects List*, would interfere with adequate emergency access to the Project site, because there would not be substantial traffic near the Project site as a result of these past, present, and reasonably foreseeable future projects at the cumulative level. Emergency vehicles would be able to adequately access the Project site via SR 33 (South Lost Hills Road) and Sutter Avenue without significant congestion or interference from surrounding vehicles, and Project site access would be maintained. The cumulative impact would be less than significant. For the same reasons, the PG&E improvements would have a less than significant cumulative impact.

3.18.5 References

Caltrans (California Department of Transportation). 2022. 2022 Traffic Volumes on California Highways. Available: https://dot.ca.gov/programs/traffic-operations/census.

FCRTA (Fresno County Rural Transit Agency). 2024. Inter-City Transit: Coalinga Route Guide. Available: https://www.ruraltransit.org/wp-content/uploads/2024/06/Coalinga-Transit-1.pdf. Last updated February 2, 2024.

Fresno COG (Fresno Council of Governments). 2017. *Fresno County Congestion Management Process Update*. September 2017. Available: https://www.fresnocog.org/wp-content/uploads/publications/CMP-report-Sept-2017_final.pdf.

Fresno COG (Fresno Council of Governments). 2022. *2022 Regional Transportation Plan & Sustainable Communities Strategy*. Final Document. Released for 55-day review and public comment on April 15, 2022; adopted July 28, 2022. Available: https://www.planfresno.com/sustainable-communities-strategies-fall-outreach/.

Fresno COG (Fresno Council of Governments). 2024. *Fresno County Regional Active Transportation Plan*. Final Draft. May 30, 2024. Available: https://www.fresnocog.org/project/active-transportation/.

Fresno County. 1974. *Coalinga Regional Plan*. Available upon request from Fresno County Public Works and Planning. Accessed September 10, 2024.

Fresno County. 2013. *Fresno County Regional Bicycle & Recreational Trails Master Plan*. Adopted September 24, 2013. Department of Public Works and Planning. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/8042-reg-bicycle-and-rec-trails-master-plan.pdf.

Fresno County. 2024. *Fresno County General Plan Policy Document*. Transportation and Circulation Element. Updated February 20, 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf.

KART (Kings Area Regional Transit). 2021. Route Maps and Schedule: Route 12 Hanford-Avenal Southbound. July 2021. Available: https://www.kartbus.org/wp-content/uploads/2021/07/Route-12.pdf.

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3.19 Utilities and Service Systems

This section identifies and evaluates issues related to utilities and service systems, including water, wastewater treatment or stormwater drainage, electric power, natural gas, telecommunications facilities, and solid waste. 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 utilities and service systems (**Appendix A**, *Scoping Report*).

This analysis is based in part on a Project-specific water supply assessment prepared on the Applicant's behalf (**Appendix J**, *Water Supply Assessment and Update*). The preparers of this Draft EIR independently reviewed the Project-specific water supply assessment 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.

3.19.1 Setting

3.19.1.1 Study Area

For the purposes of this utilities and service systems analysis, the study area includes the service areas of the utility or service systems that would provide service to the Project site.

3.19.1.2 Environmental Setting

Water Supply Services

The Project site is located within the area served by the Pleasant Valley Water District (PVWD). The PVWD was formed on January 23, 1963, pursuant to the California Water Code for the purpose of contracting with the U.S. Bureau of Reclamation for long-term water supply. The intended water supply was to be delivered from the State Water Project's California Aqueduct (or San Luis Canal, a segment of the California Aqueduct) through the Coalinga Canal (also referred to as the Pleasant Valley Canal). Although the canal and associated pumping plant were constructed with capacity for delivering to the PVWD, it has not received a long-term Central Valley Project water contract to date (PVWD 2024a).

The PVWD includes approximately 38,000 total acres, of which 30,000 acres are rated as farmable. The PVWD has 88 active groundwater wells that draw from the underlying Pleasant Valley Subbasin of the San Joaquin Valley Groundwater, rated as medium priority by the California Department of Water Resources (DWR). The Pleasant Valley Subbasin and PVWD boundaries are nearly identical (PVWD 2024b). Within the PVWD, areas adjacent to Los Gatos Creek and Zapato Chino Creek were identified as areas favorable for intentional groundwater recharge through direct recharge from surface water (e.g., streams, agricultural irrigation, precipitation). An additional smaller area was identified adjacent to Jacalitos Creek, approximately between the alignments of West Jayne Avenue to the north and Lost Hills Road to the south (Pleasant Valley GSA 2024).

Landowners predominantly use groundwater, but in recent years they have started using imported surface supplies to help offset groundwater pumping. For example, landowners may purchase supplemental water supplies from senior water rights holders located within the Sacramento and Feather river systems. The

PVWD may also apply to the U.S. Bureau of Reclamation for Section 215 waters (floodwaters) on the Sacramento River or accept Central Valley Project contract supplies transferred in from other federal water districts (PVWD 2024b). See Section 3.11, *Hydrology and Water Quality*, for additional description of surface water and groundwater resources in the study area. There are two groundwater wells within the Project site that produce water from the underlying Pleasant Valley Subbasin.

Wastewater Services

Wastewater service is not currently provided to the Project site. In Fresno County, rural areas such as the Project site are outside the municipal sphere of influence and generally use on-site wastewater treatment systems (OWTS) (septic systems) for wastewater treatment and disposal.

Stormwater

The Project site is located within the area governed by the Central Valley Regional Water Quality Control Board, which oversees implementation of the *Water Quality Control Plan for the Tulare Lake Basin*, or Basin Plan (see Section 3.11, *Hydrology and Water Quality*, for additional details). As explained in the Basin Plan, direct precipitation typically percolates into valley groundwater if not lost through consumptive use, evapotranspiration, or evaporation (Central Valley RWQCB 2018). When adequate rainfall occurs on the Project site to produce runoff, it likely drains from the Project site and/or percolates directly into the ground after a relatively short travel distance.

There are no stormwater drainage systems on the Project site.

Electricity and Natural Gas

Pacific Gas and Electric Company (PG&E) is an investor-owned utility company that provides electricity and natural gas supplies throughout a 70,000-square-mile service area that includes western Fresno County and the Project site (PG&E 2024). The PG&E Gates Substation is located northeast of the Project site and two transmission lines transect the Project site (PG&E 2019).

Telecommunications Facilities

Communications in the study area include cellular telephone service provided by AT&T and multiple cable television and internet service providers.

Solid Waste Management

The Fresno County Resources Division is responsible for solid waste coordination and solid waste disposal activities and has a number of facilities that could accept solid waste from the Project site. The nearest landfill to the Project site is the Avenal Regional Landfill (Avenal Landfill), approximately 6 miles southeast of the Project site. The Avenal Landfill accepts solid waste and construction/demolition debris, as well as special wastes upon approval (Waste Connections 2024). The Avenal Landfill is permitted to receive 6,000 tons (approximately 4,286 cubic yards) of waste per day, has a remaining capacity of 28,900,000 cubic yards, and is expected to reach its permitted capacity and cease operation in 2056 (CalRecycle 2024a).

The next closest solid waste disposal facility is the American Avenue Landfill, owned and operated by Fresno County and located in the city of Kerman, approximately 50 miles northeast of the Project site

(Fresno County 2024a). The American Avenue Landfill is permitted to receive 2,200 tons (approximately 1,571 cubic yards) of waste per day, has a remaining capacity of approximately 29,358,535 cubic yards, and is expected to reach its permitted capacity and cease operation in 2031 (CalRecycle 2024b).

The Project site is located within the Mid Valley Disposal Company's service area, which provides industrial waste disposal. The Mid Valley Disposal Company has multiple transfer stations in the vicinity of the Project site (Avenal and Coalinga) (Mid Valley Disposal 2024).

3.19.1.3 Regulatory Setting

Federal

No federal regulations pertaining to utilities and service systems apply to the Project.

State

California Public Utilities Commission General Order No. 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state.

Water

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (Water Code §10723) provides a framework for sustainable management of groundwater resources. In groundwater basins designated by DWR as medium and high priority, local public agencies and locally controlled groundwater sustainability agencies (GSAs) are required to develop and implement groundwater sustainability plans (GSPs) or alternatives to GSPs (i.e., groundwater management plans). Each GSP or alternative must include measurable objectives and interim milestones for achieving sustainability goals for the given groundwater basin. Each GSP must also include a physical description of the basin, including information on groundwater levels, groundwater quality, subsidence and groundwater/surface-water interaction, historical and projected water demand and supply data, monitoring and management provisions, and a description of how the plan would affect other plans (DWR 2024).

The Project site is located in the Pleasant Valley Subbasin and rated as medium priority by DWR. The Pleasant Valley GSA was officially formed by the PVWD on January 24, 2017, to meet the compliance requirements of California's SGMA legislation. See Section 3.11.1.3, *Regulatory Setting*, in Section 3.11, *Hydrology and Water Quality*, for additional details.

Executive Order N-7-22

In response to extreme and expanding drought conditions in California, Governor Gavin Newsom issued Executive Order N-7-22 in March 2022. Among other water resource considerations, Executive Order 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 SGMA-regulated medium or high-priority groundwater basin unless all the following occurs:

- The GSA managing the basin verifies in writing that the proposed groundwater extractions:
  - Would be consistent with any applicable GSP.
  - Would not decrease the likelihood of achieving a sustainability goal for the basin.
- The well-permitting agency determines that extraction of groundwater from the proposed or modified well is not likely to do either of the following:
  - Interfere with the production and functioning of existing nearby wells.
  - Cause subsidence that would adversely affect or damage nearby infrastructure.

Should an existing well be altered to serve Project water demand, Executive Order N-7-22 would apply. Because the Pleasant Valley Subbasin is defined as a medium-priority groundwater basin, the Pleasant Valley GSA (as the GSA for the portion of the groundwater basin underlying the Project site) would need to verify that stated conditions are met with respect to groundwater and that the new well would be consistent with the GSP before Fresno County could permit this construction.

California Well Standards Ordinance

DWR Bulletin 74 (including the combined water well standards in Bulletins 74-81 and 74-90) establishes the minimum standards governing California water wells to protect California's groundwater quality (DWR 2024). Local jurisdictions like Fresno County have the authority to adopt, administer, and enforce standards that meet or exceed the Bulletin 74 standards.

Wastewater

Septic System Requirements of the California Plumbing Code

Title 24, Part 5 of the California Code of Regulations (24 Cal. Code Regs. Part 5) regulates plumbing systems. Based on the American National Standard 2015 Uniform Plumbing Code, the California Plumbing Code attempts to minimize public risk by specifying technical standards of design, materials, workmanship, and maintenance for plumbing systems, including septic systems.

Stormwater

National Pollutant Discharge Elimination System Construction General Permit

The National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order WQ 2022-0057-DWQ, NPDES No. CAS000002), commonly referred to as the Construction General Permit, is required for projects that would disturb 1 or more acres of soil during construction. 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. Because the Project would disturb 1 or more acres of soil, it would be subject to the Construction General Permit. As such, a storm water pollution prevention program (SWPPP) would be required. See Section 3.11, *Hydrology and Water Quality*, for a more detailed discussion of water quality and SWPPP requirements.

Electricity and Natural Gas

Government Code Requirements for Utility Notification

Government Code §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 study area. USA North notifies utility providers with buried lines within 1,000 feet of the excavation, and those providers are required to mark the specific location of their facilities before excavation. The code also requires excavators to probe and expose existing utilities, in accordance with state law, before using power equipment. 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 2021).

California Public Utilities Commission General Order 131-E

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 implements CEQA for utility construction by PG&E and the other public utilities under its jurisdiction, and regulates the location and relocation of power lines by investor-owned utilities, such as PG&E. Section XI.B of General Order 131E clarifies that local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to CPUC jurisdiction (CPUC 2024).

Solid Waste Management

California Integrated Waste Management Act

When enacted in 1989, the California Integrated Waste Management Act (Public Resources Code §40050 et seq.) set into place 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. The act required all California cities, unincorporated portions of counties, 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 were required to maintain the 50 percent diversion past 2000. *Diversion* includes waste prevention, reuse, and recycling. In addition, the act created the California Integrated Waste Management Board, now known as the California Department of Resources Recycling and Recovery, or CalRecycle. Under the California Integrated Waste Management Act, jurisdictions must submit solid waste planning documentation to CalRecycle.

California Code of Regulations Title 22, Division 4.5

In 22 Cal. Code Regs. Division 4.5, environmental health standards are included for the identification, collection, transport, disposal, and recycling of hazardous waste. The term *hazardous waste* is defined in §§66260.10 and 66261.3 of the regulations and includes acutely hazardous waste, extremely hazardous waste, non–Resource Conservation and Recovery Act[1] hazardous waste, Resource Conservation and Recovery Act hazardous waste, special waste, and universal waste.

[1] The Resource Conservation and Recovery Act, enacted in 1976, is the United States' principal federal law governing the disposal of solid waste and hazardous waste (United States Code Title 42, Section 6901 et seq.).

Universal wastes are wastes commonly produced by households and businesses including televisions, computers and other electronic devices, batteries, mercury-containing equipment, lamps, cathode ray tubes, and aerosol cans (22 Cal. Code Regs. §66273.9 et seq.). The requirements for universal waste are referred collectively to *California's Universal Waste Rule*. California's Universal Waste Rule allows businesses and individuals to transport, handle, and recycle universal wastes differently than for most hazardous wastes: "The more relaxed requirements for managing universal wastes were adopted to ensure that they are managed safely and are not disposed of in the trash" (DTSC 2010). Requirements for universal wastes include recycling, recovery, the return of spent items to the manufacturer, or disposal at an appropriately permitted facility.

Division 4.5 of Title 22 also provides restrictions and standards relevant to generators of hazardous waste; transporters of hazardous waste; owners and operators of hazardous waste transfer, treatment, storage, and disposal facilities; recyclable hazardous wastes; and military munitions among other things.

Title 24 California Code of Regulations

The California Green Building Standards Code (CALGreen Code) (24 Cal. Code Regs. Part 11) applies to new construction and demolition associated with a construction permit. It requires covered projects to recycle and/or salvage for reuse at least 65 percent of their non-hazardous construction and demolition waste or to meet a local construction and demolition waste management ordinance, whichever is more stringent (CalRecycle 2023).

Title 27 California Code of Regulations

Title 27 defines regulations for the treatment, storage, processing, and disposal of solid waste. The State Water Resources Control Board maintains and regulates compliance with Title 27. The Project's compliance would be enforced by the Central Valley Regional Water Quality Control Board.

Local

Fresno County 2024 General Plan

The following policies identified in the Public Facilities and Services Element of the Fresno County General Plan (Fresno County 2024a) are applicable to the Project:

General Public Facilities and Services

> ***Policy PF-A.3 Industrial Infrastructure:*** The County shall require new industrial development to be served by community sewer, stormwater, and water systems where such systems are available or can feasibility be provided.
>
> ***Policy PF-A.5 Underground Utilities:*** The County shall encourage the placement of irrigation canals and utility lines underground as urban residential, commercial, and industrial development takes place.

Water Supply and Delivery

> ***Policy PF-C.1 Retain Existing Water Supplies:*** The County shall engage in, and support, the efforts of others within Fresno County to retain existing water supplies and develop new water supplies.
>
> ***Policy PF-C.2 Import Surface Water:*** The County shall actively engage in efforts and support the efforts of others to import flood surplus, and other available waters for use in Fresno County.

Policy PF-C.3 Surface Water Use: To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.

Policy PF-C.4 Water Storage: The County shall support efforts to expand groundwater and/or surface water storage that benefits Fresno County.

Policy PF-C.8 Preserve Local Water Rights/Supply: The County shall work with local irrigation districts and water management agencies to preserve local water rights and supply.

Policy PF-C.10 Ongoing Water Supply: The County shall actively participate, or support the efforts of other local agencies, in the development and implementation of Sustainable Groundwater Management Plans to ensure a sustainable water supply is available to help support agriculture and accommodate future growth.

Policy PF-C.15 Water Demand Impact Mitigation: If the cumulative effects of more intensive land use proposals are detrimental to the water supplies of surrounding areas, the County shall require approval of the project to be dependent upon adequate mitigation. The County shall require that costs of mitigating such adverse impacts to water supplies be borne proportionately by all parties to the proposal.

Policy PF-C.16 Water Supply Evaluation: The County shall, prior to consideration of any discretionary project related to land use, require a water supply evaluation be conducted. The evaluation shall include the following:

a. A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made "firm" by water banking of other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required.
b. If use of groundwater is proposed, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated.
c. A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.

Policy PF-C.18 Small Community Water Systems: The County shall discourage the proliferation of small community water systems.

Policy PF-C.19 Private Water Wells: The County shall not permit new private water wells within areas served by a public water system.

Policy PF-C.23 Water Conservation Technologies: 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-C.25 Integrated Regional Water Management Planning: The County shall participate in integrated Regional Water Management Planning efforts with other local and regional water stakeholders to plan for the efficient use, enhancement, and management of surface and groundwater supplies.

Wastewater Collection, Treatment, and Disposal

Policy PF-D.6 On-site Sewage Disposal Systems: 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.

Storm Drainage and Flood Control

Policy PF-E.9 100-year Flood Protection: The County shall require new development to provide protection from the 100-year flood as a minimum.

Policy PF-E.11 Natural Site Drainage Pattern: The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.

Policy PF-E.13 Natural Storm Water Drainage Systems: The County shall encourage the use of natural storm water drainage systems to preserve and enhance natural drainage features.

Policy PF-E.14 Retention-Recharge Basins: 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.15 Basin Landscaping and Open Space: The County should require that retention-recharge basins be suitably landscaped to complement adjacent areas and should, wherever possible, we made available to the community to augment open space and recreation needs.

Policy PF-E.16 Minimal Sedimentation and Erosion: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

Policy PF-E.17 Groundwater Recharge: The County shall encourage the local agencies responsible for flood control or storm drainage retention-recharge basins located in soil strata strongly conducive to groundwater recharge to develop and operate those basins in such a way as to facilitate year-round groundwater recharge.

Policy PF-E.20 Storm Water Drainage Discharges: The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.

Policy PF-E.21 Best Management Practices: 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.

Landfills, Transfer Stations, and Solid Waste Processing Facilities

Policy PF-F.1 Solid Waste Source Reduction: 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.2 Onsite Recycling Storage and Collection: The County shall require new commercial, industrial, and multi-family residential uses to provide adequate areas on-site to accommodate the collection and storage of recyclable materials.

Policy PF-F.5 County Integrated Waste Management Plan: The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

Policy PF-F.8 Existing Public Landfills: The County has designated the American Avenue Landfill as the regional landfill to serve the incorporated and unincorporated areas of the county. The publicly-operated Coalinga and Clovis landfills may continue to operate provided the sites are operated economically and in compliance with all environmental laws and regulations. Existing publicly-operated landfills may be expanded.

Utilities

Policy PF-J.1 Existing and Future Utility Demands: The County shall encourage the provision of adequate gas and electric, communications, and telecommunications service and facilities to serve existing and future needs.

Policy PF-J.2 Gas and Electric Systems: The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

Fresno County Well Permitting Program

Within their respective jurisdictions, the Pleasant Valley GSA (as the relevant GSA) regulates the *use* of water wells while the County permits the *installation* of wells. In this capacity, the County issues permits to construct new wells; reconstruct, repair or deepen existing wells; and destroy abandoned wells. The County enforces the provisions of the following:

- California Well Standards Ordinance and the construction standards set forth in the California Well Standards (Bulletins 74-81 and 74-90).
- Fresno County Ordinance Code, Title 14, primarily Chapter 14.04 (Well Regulations–General Provisions).
- Chapter 14.08 (Well Construction, Pump Installation and Well Destruction Standards).
- Fresno County General Plan (Fresno County 2024a) Policy PF-C.18 and PF-C.19.

Well drilling contractors must possess an active C-57 Well Contractors License to perform construction, reconstruction, or destruction work on wells (Fresno County 2024b).

Fresno County Construction and Demolition Debris Recycling Program

The Fresno County Construction and Demolition (C&D) Debris Recycling Program is intended to assist the County in complying with the requirement to divert solid waste from California landfills pursuant to the California Integrated Waste Management Act (discussed above), and to provide builders with a way to document waste reduction and diversion requirements included in the California Green Building Standards Code (Fresno County 2024c). The County C&D Debris Recycling Program contains the

following requirements related to utilities that would apply to the Project during the construction and decommissioning phases:

- Complete and submit a waste management plan for recycling a minimum of 65 percent of all non-hazardous waste, scrap, and debris generated for the scope of work covered by the building permit.
- During construction/demolition, collect data for the project's Waste Log, and ensure that all subcontractors are familiar with the waste management plan and have signed the acknowledgement form. Keep all weight/gate tags, receipts, and invoices for services to support the data on the waste log.
- After the project is complete and 14 days before the project's final inspection, submit the completed acknowledgement form(s), waste log, and all supporting documents.

3.19.2 Significance Criteria

The Project would result in a significant impact related to utilities and service systems if it would do any of the following:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

b) Fail to 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 does not have 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) Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

3.19.3 Direct and Indirect Effects

3.19.3.1 Applicant-Proposed Measures and Design Features

The Project includes certain actions to reduce the potential significance of initially anticipated environmental impacts related to a variety of resource areas, including utilities and service systems. The full list of actions is provided in Chapter 2, Section 2.9, *Applicant-Proposed Measures and Design Features*. Of these, the actions described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention*, and Section 2.9.11, *Compliance with Applicable Laws and Standards*, are relevant to the analysis below.

3.19.3.2 Methodology

The evaluation of impacts related to utilities and service systems is based on a review of existing laws, regulations, plans, policies, and other documents that address such systems in the study area. In this context, the analysis considers potential Project-caused changes in service levels or capacity of the

utilities and service systems that could result in adverse impacts on the physical environment. In determining the level of significance of Project-caused changes, the analysis assumes that the Project would comply with all applicable laws.

3.19.3.3 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Criterion a) Whether the Project would require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Impact 3.19-1: The Project would result in the relocation or 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*)

As detailed in Chapter 2, *Project Description*, the Project involves construction of new water (i.e., improvements to an existing groundwater well), wastewater treatment (i.e., OWTS), stormwater drainage, electrical power, and telecommunications facilities. These facilities that are proposed as part of the Project (including the utility-scale solar photovoltaic energy generating facility (solar facility) and energy storage system [ESS]) could result in potential environmental impacts that are discussed and analyzed throughout this Draft EIR. The following subsections evaluate whether the solar facility and ESS could result or require the construction or relocation of new or expanded facilities beyond those included as part of the Project. The Project would not use natural gas for construction, operation and maintenance (O&M), or decommissioning. Therefore, the Project would not result in the relocation or construction of any new or expanded natural gas facilities, and natural gas facilities are not discussed further.

Water Facilities

As stated in Section 2.5.1.4, *Other Facilities and Infrastructure*, in Chapter 2, *Project Description*, the Project (i.e., solar facility and ESS) would not require connections to existing utilities, nor would it affect the service of existing utility providers within the county. As detailed in Appendix J, *Water Supply Assessment and Update*, the Project would introduce a new use of groundwater from the Pleasant Valley Subbasin, replacing existing agricultural irrigation demands on the Project site. As described in Section 2.5.2.1, *Water*, in Chapter 2, and discussed further in Section 3.11, *Hydrology and Water Quality*, Impact 3.11-2, the Project would require water for construction (e.g., dust suppression during grading and other ground disturbance to prepare to the site), during O&M (e.g., emergency fire suppression, solar panel cleaning, soil conditioning, and sheep grazing), and during decommissioning (e.g., dust suppression and earthwork). Although some Project water demands (e.g., fire and emergency management purposes) would be met on-site with 30,000-gallon aboveground water tanks, additional Project water demands (e.g., construction dust control) would be fulfilled by improvements to an existing well at the intersection of Sutter Avenue and State Route 33 (South Lost Hills Road) (see proposed well location on Figure 3.11-2). No surface water supplies are proposed to meet Project water demand.

As stated above, the water facilities (i.e., improvements to an existing groundwater well) proposed as part of the Project could result in potential environmental impacts that are discussed and analyzed throughout this Draft EIR. The proposed improvements to the existing well would introduce a new water facility, but only minimal construction would be required because the well already exists. Additionally, the improvements would not be new, nor would they expand the existing water facilities. The existing well would be improved in accordance with the California Well Standards Ordinance and Fresno County's Well Permitting Program, thereby ensuring that an adverse environmental effect would be avoided. Therefore, the Project's impacts related to the construction or relocation of new or expanded water facilities would be less than significant.

Wastewater Facilities

The Project site is in a rural location and outside of a municipal sphere of influence. Therefore, no wastewater service is currently provided to the Project site. As described in Section 2.5.2.2, *Wastewater*, portable restrooms would be provided and serviced by licensed providers during all phases of construction of the Project. As noted in Section 2.5.1.4, *Other Facilities and Infrastructure*, two prefabricated buildings would be provided on-site for O&M services and control services. The prefabricated buildings would include restroom facilities connected to a new OWTS and used during operations.

As stated above, the OWTS proposed as part of the Project could result in potential environmental impacts that are discussed and analyzed throughout this Draft EIR. The construction of the new OWTS would introduce a new wastewater facility; however, the OWTS would be designed and constructed according to County requirements, thereby ensuring that adverse environmental effects would be avoided. Therefore, the Project's impacts related to the construction or relocation of new or expanded wastewater facilities would be less than significant.

Stormwater Facilities

As stated in Section 2.5.1.4, *Other Facilities and Infrastructure*, the Project would not require connections to existing water and sewer utilities. As described in Section 2.5.2.3, *Stormwater*, the Project would include a stormwater drainage system that would include on-site detention or retention basins that would serve to retain stormwater runoff and meet County requirements to ensure that no increase in off-site drainage would occur. Temporary erosion control sediment basins would be placed and maintained during construction. Areas of the Project site that would increase the impervious area, such as the ESS yard, would require a permanent detention pond. Sediment basins and detention ponds would be located at the downstream end of the drainage area before water leaves the Project site and would be dry except during or immediately after a rain event. These stormwater facilities would be designed to retain stormwater during a 100-year, 48-hour rain event consistent with state, regional, and Fresno County requirements.

As stated above, the stormwater facilities proposed as part of the Project would result in potential environmental impacts that are discussed and analyzed throughout this Draft EIR. As described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention*, because Project construction would disturb more than 1 acre of soil, the Applicant would prepare, file, and implement a SWPPP in accordance with Construction General Permit requirements. The SWPPP would include measures to limit erosion and the off-site transport of pollutants from construction activities. The SWPPP would designate

BMPs that would be followed during construction to help stabilize disturbed areas and reduce erosion, sedimentation, and pollutant transport. Therefore, the construction of the new stormwater facilities would not cause adverse environmental effects. The Project's impacts related to the construction or relocation of new or expanded stormwater facilities would be less than significant.

Electrical Power Facilities

The Project itself is a renewable energy project that involves the construction, operation, maintenance, and decommissioning of a solar facility, ESS, and associated facilities and infrastructure to generate and store 300 megawatts of alternating current (i.e., MW_{AC}).

As described in Section 2.5.2.5, *Power*, in Chapter 2, *Project Description*, diesel generators would be used during construction for electricity needs (i.e., to power handheld construction equipment) and lighting would be provided through solar or battery-powered lights. During operation, electricity would be taken from the distribution feed provided through new overhead pole connections to existing PG&E infrastructure (as described further in Section 2.10, *PG&E Infrastructure*). As described in Section 2.5.1.4, *Other Facilities and Infrastructure*, the Project would include a small uninterruptible power supply to the ESS facility during rare events when all or part of the facility is disconnected from the distribution system. The uninterruptible power supply would be sized to accommodate proposed control systems and minimal targeted heating, ventilation, and air conditioning system loads for equipment protection by providing a certain amount of run time based on temporary energy storage. The power for the ESS would be provided from the power grid, which would be supplemented by the solar array to maintain battery safety and warranty temperature parameters when grid power is not available. As described in Section 2.8, *Decommissioning and Site Reclamation*, electrical power would be maintained in place and operational during decommissioning, to be available for limited use by decommissioning and site restoration workers. Diesel generators may be used as a backup/secondary source of power during decommissioning.

In summary, no electrical services would be required during construction. However, during operation, the Project would consume electricity when not powered by energy generated on-site. During decommissioning, electrical power would be maintained for limited use. Electric facilities and connections proposed as part of the Project could result in environmental impacts that are discussed throughout this Draft EIR. The Project would not result in or require the construction or relocation of new or expanded electric facilities beyond those included as part of the Project. Therefore, impacts associated with new or expanded electrical facilities would be less than significant.

Telecommunications Facilities

As described in Section 2.5.1.4, *Other Facilities and Infrastructure*, the substation electrical control building would be used for telecommunications activities. Telecommunication lines would be trenched approximately 3–4 feet deep and 2–3 feet wide, as applicable.

As stated above, the telecommunication facilities proposed as part of the Project could result in environmental impacts that are discussed throughout this Draft EIR. As described in Section 2.9.3, *Erosion and Sediment Control and Pollution Prevention*, because Project construction would disturb more than 1 acre of soil, the Applicant would prepare, file, and implement a SWPPP in accordance with Construction General Permit requirements. The SWPPP would include measures to limit erosion and the

off-site transport of pollutants from construction activities. The SWPPP would designate BMPs that would be followed during construction to help stabilize disturbed areas and reduce erosion, sedimentation, and pollutant transport. Therefore, construction of the telecommunication facilities would not cause adverse environmental effects. The Project's impacts related to the construction or relocation of new or expanded telecommunication facilities would be less than significant.

Mitigation: None required.

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 3.19-2: 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 with Mitigation Incorporated*)

A Project-specific water supply assessment (Appendix J, *Water Supply Assessment and Update*) was prepared to demonstrate the availability of water supply during normal, single dry, and multiple dry years to serve the Project and reasonably foreseeable future development. The water supply assessment calculated water demands over 20 years (as the future projection period required by Senate Bill 610) and the anticipated lifetime of the Project (to support a conservative analysis of total Project water demands).

As detailed in Appendix J, *Water Supply Assessment and Update*, the Project would introduce a new use of groundwater from the Pleasant Valley Subbasin (ranked by DWR as medium priority) (Pleasant Valley GSA 2024), replacing existing agricultural irrigation demands on the Project site. The Project would require water for construction (e.g., dust suppression), for O&M (e.g., emergency fire suppression, solar panel cleaning, soil conditioning, and sheep grazing), and for decommissioning (e.g., dust suppression and earthwork).

Table 3.19-1 presents estimated groundwater demands for Project construction, O&M, and decommissioning. The Project's total construction water demand would be approximately 1,080 acre-feet (AF) over the 2-year construction period; operational water demand would be approximately 1,084 AF over 35 years, or approximately 31 AFY. As stated in Section 2.5.1.4, *Other Facilities and Infrastructure*, the decommissioning water use would be comparable to the construction-related water use, or approximately 540 AF over the 1-year decommissioning period. The water supply assessment does not specify changes in water demand across water year types; therefore, this impact analysis assumes that water demand would be the same during normal, single dry, and multiple dry water years as shown in Table 3.19.-1.

Some Project water demands (e.g., fire and emergency management purposes) would be met on-site with 30,000-gallon aboveground water tanks; additional Project water demand (e.g., construction dust control) would be fulfilled by improvements to an existing well at the intersection of Sutter Avenue and State Route 33 (South Lost Hills Road) (see proposed well location on Figure 3.11-2). Drinking water for employees would be bottled and brought to the Project site for consumptive uses. For conservative water supply planning purposes, this impact analysis assumes that all non-potable water for the Project would be sourced from groundwater pumped from the underlying Pleasant Valley Subbasin.

TABLE 3.19-1
GROUNDWATER DEMANDS FOR THE PROJECT

Solar Facility and ESS	Water Demand (AFY)	Years	Water Demand (AF)
Construction	540	2	1,080
Operation and Maintenance	30.97	35	1,084
Decommissioning	540	1	540
Total	**--**	**38**	**2,704**

Notes: AF = acre-feet; AFY = acre-feet per year; ESS = energy storage system

Source: Data compiled by Environmental Science Associates in 2024 (see Chapter 2, *Project Description*, and Appendix J, *Water Supply Assessment and Update*)

As presented in Impact 3.11-2 in Section 3.11, *Hydrology and Water Quality*, the Project would require an average of 64 AFY over its 38-year lifetime (2 years of construction, 35 years of operation, and 1 year of decommissioning). In comparison with water use assumed in the GSP for existing land uses on the Project site (1,113 AFY for irrigation of hay and grain crops), the Project's water demand represents approximately 6 percent of annual water use under existing conditions accounted for in the GSP. If considering only water demand for operation (approximately 31 AFY), this equates to less than 3 percent of annual water use accounted for in the GSP. Therefore, conversion of the existing land for the Project would reduce demand for groundwater resources compared to existing conditions, potentially accelerating achievement of sustainable groundwater conditions in the Pleasant Valley Subbasin. Thus, implementation of the Project would result in a decrease in total water demand.

As described in Appendix J, *Water Supply Assessment and Update*, the groundwater budget and supply availability projections in the Pleasant Valley Subbasin GSP account for the varying climate conditions, including normal, single dry, and multiple dry years. The water supply assessment concludes that Project water demands can be met under normal, single dry, and multiple dry year conditions over the next 20 years through the Pleasant Valley Subbasin. Therefore, the Project would have a less-than-significant impact on water supply over the next 20 years.

As indicated in Section 2.1, *Project Overview*, in Chapter 2, *Project Description*, the requested unclassified conditional use permit would have a term of 35 years, with an option to extend the operation of the facility for an additional 5 years based on energy demands. Assuming that the Project begins operating in 2029 and operates for 35 years under the conditional use permit (to 2064), the assessment of water supply availability as part of the Project-specific water supply assessment addresses the availability of water for the length of the conditional use permit. However, if the Project lifetime is extended for an additional 5 years (to 2069), the Project-specific water supply assessment does not evaluate the availability of water for these additional years.

As stated in Impact 3.11-2 of Section 3.11, *Hydrology and Water Quality*, conversion of the existing land for the Project would reduce demand for groundwater resources compared to existing conditions, potentially accelerating achievement of sustainable groundwater conditions in the Pleasant Valley Subbasin. Therefore, it is anticipated that sufficient groundwater supplies would be available to serve an additional 5 years as well as decommissioning (anticipated to occur in 2065 without the extension and in

2070 with the extension). However, if there were insufficient water supplies to serve the Project through the permit extension, impacts would be potentially significant.

Implementation of **Mitigation Measure 3.19-1, Confirmation of Future Water Supply Availability Prior to Project Extension**, would ensure that sufficient water supplies would be available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years for the potential end-life of the Project (up to 2070). If future water supplies (post-2065) are determined to be insufficient to support a five-year extension of the permitted use, the Project would require decommissioning. Therefore, the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years, and impacts would be less than significant with implementation of Mitigation Measure 3.19-1.

> **Mitigation Measure 3.19-1: Confirmation of Future Water Supply Availability Prior to Project Extension.** To ensure that sufficient water supplies will be available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years after 2065, the Applicant shall identify and provide confirmation to Fresno County demonstrating that the water supply source(s) proposed for use during the remaining operation and decommissioning phases of the Project are sufficient and will not impede sustainable groundwater management of the Pleasant Valley Subbasin. Should sufficient water supplies not be available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years after 2065, then Project decommissioning would be initiated in 35 years after commercial operation without a five-year extension.
>
> **Significance after Mitigation:** Less than Significant. Implementation of this mitigation measure would ensure that future water supply needed for operation, maintenance, and decommissioning would be available by requiring the identification of water a supply before decommissioning activities.

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.

As stated in Impact 3.19-1, the Project site is in a rural location and outside of a municipal sphere of influence. Therefore, no wastewater collection service is currently provided to the Project site. As described in Section 2.5.2.2, *Wastewater*, portable restrooms would be provided and serviced by licensed providers during all phases of the Project. As noted in Section 2.5.1.4, *Other Facilities and Infrastructure*, two prefabricated service buildings would include restroom facilities that would be connected to an OWTS to be used only during Project operation. Given the small workforce anticipated during Project operation (six permanent employees on staff to visit the site as needed), it is assumed that the OWTS would be designed and constructed to County OWTS standards and would accommodate the anticipated wastewater flows from the service buildings. The OWTS would be managed and maintained consistent with state and County requirements to ensure that the amount of sanitary waste generated would not exceed the capacity and availability of private licensed providers within the region. Because the Project would construct and operate its own OWTS, it would not rely on public wastewater treatment providers and thus would not affect the wastewater treatment provider's ability to serve existing wastewater treatment commitments. 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 3.19-3: 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*)

As described in Section 3.19.1.2, *Environmental Setting*, the Avenal Landfill is permitted to receive approximately 4,286 cubic yards of waste per day, has a remaining capacity of 28,900,000 cubic yards, and is expected to reach its permitted capacity and cease operation in 2056. The next closest landfill to the Project site, the American Avenue Landfill, is permitted to receive 1,571 cubic yards of waste per day, has a remaining capacity of approximately 29,358,535 cubic yards, and is expected to reach its permitted capacity and cease operation in 2031.

As summarized in Section 2.5.2.4, *Solid Waste*, the Project would generate solid waste during construction, O&M, and decommissioning. During construction, solid waste generated would likely consist of cardboard, wood pallets, copper wire, scrap metal, plastic, common trash, and wood wire spools. Construction would generate an average of approximately 80 cubic yards of solid waste per week, or a total of 8,320 cubic yards over the 2-year construction period. The majority of construction and demolition (C&D) debris generated would be non-hazardous. 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 complying with California's solid waste reduction goals. Therefore, construction waste materials such as metal and wood would be separated from the waste stream and recycled as appropriate. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site. Dumpsters would be collected regularly by a commercial service and delivered to a registered landfill, such as the Avenal Landfill or American Avenue Landfill, which both have existing capacity to accept C&D debris and other solid waste.

Long-term waste generation during O&M of the Project (35 years) would be minimal (approximately 1 cubic yard of waste per week) and consistent with typical office waste. All waste would be collected in an on-site dumpster that would be handled by a standard third-party waste management service (i.e., Mid Valley Disposal Company).

The types of solid waste generated during decommissioning would be similar to those described for construction and are 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. For example, aboveground structures such as solar photovoltaic modules, racking systems, batteries, enclosures, and fencing 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. Copper or aluminum wire is a recyclable commodity, and as such, would be sold for salvage value or recycled. The Project site would be returned to a condition comparable to that before construction, as described in Appendix B.2, *Solar Reclamation Plan*.

Table 3.19-2 identifies the estimated solid waste generated during construction and decommissioning. The amount of solid waste generated constitutes a small portion (approximately 0.03 percent) of the remaining capacity at both the Avenal Landfill and the American Avenue Landfill. Based on the amount of solid waste generated per week during construction, the daily amount of waste generated would not be anticipated to exceed the daily capacity of either the Avenal Landfill or the American Avenue Landfill. Assuming that the Project begins operating in 2029 and operates for 35 years (to 2064), both the Avenal Landfill and American Avenue Landfill may be closed. Thus, solid waste generated during decommissioning would be hauled to another approved facility with capacity.

TABLE 3.19-2
SOLID WASTE GENERATED DURING CONSTRUCTION AND DECOMMISSIONING OF THE PROJECT

Solar Facility and ESS	Cubic Yards per Week	Duration (years)	Cubic Yards per Phase
Construction	80	2	8,320
Decommissioning*	80	1	4,160
Total	**—**	**—**	**12,480**

Notes:
ESS = energy storage system
* Solid waste generated during decommissioning was assumed to be equivalent to the amount of solid waste generated during construction.
Source: Data compiled by Environmental Science Associates in 2024

Construction or decommissioning of the solar facility and ESS could increase total waste generation in the area; however, the incremental contribution could be reasonably accommodated by either landfill and/or a future landfill, and would not contribute significantly to the generation of 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. Therefore, 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 3.19-4: The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. (*Less-than-Significant Impact*)

Solar Facility and Energy Storage System

As detailed in Impact 3.19-3, the majority of waste generated during construction and decommissioning would be non-hazardous. During construction and decommissioning, 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. Operation of the Project would generate a negligible amount of solid waste and an on-site dumpster would be handled by a standard third-party waste management service (Mid Valley Disposal Company). Therefore, the Project would comply with federal, state, and local management and reduction statutes related to solid waste and impacts would be less than significant.

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

As described in Section 2.10, *PG&E Infrastructure*, in Chapter 2, *Project Description*, PG&E would construct a high-voltage 230-kilovolt (kV) switching station in the southeast corner of the Project site, directly adjacent to the Project substation, to accommodate the Project (see Figure 2-3). The switching station footprint would be approximately 2 acres. The substation would connect to PG&E's switching station by a new generation-tie line up to 200 feet in length. The 230 kV switching station would then connect to PG&E's existing 230 kV transmission line located directly adjacent to the switching station. Construction of the PG&E infrastructure across the 2-acre footprint would require ground disturbance similar to that required for the substation and ESS components. O&M of the PG&E infrastructure would be the same as under existing conditions.

The impacts of PG&E's construction, operation, and maintenance of this infrastructure on utilities and service systems are generally consistent with the impacts of the Project (i.e., solar facility and ESS) as presented above. Construction of the PG&E infrastructure would not require or result in the relocation of new or expanded water, wastewater treatment or stormwater drainage, natural gas, or telecommunications facilities. As mentioned above, the Project itself is a renewable energy project that involves generation of electricity. The PG&E infrastructure would not result or require the construction or relocation of new or expanded electric facilities beyond those included as part of the Project. Additionally, the Project would not use natural gas for construction, O&M, or decommissioning. Therefore, the PG&E infrastructure component would not result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities that would cause significant environmental effects. Impacts related to other utilities and service systems would be less than significant under criterion a).

Construction of the PG&E infrastructure would require construction activities and disturbance similar to those for the remainder of the Project but within an approximately 2-acre footprint, and would require water for construction (e.g., dust control). O&M activities for the PG&E infrastructure would be minimal. The Project-specific water supply assessment (Appendix J) did not provide a separate estimate for water use for the PG&E infrastructure. However, any groundwater required for construction and/or O&M of the PG&E infrastructure would be accounted for in the conservative estimates for water demand associated with the Project. Because the PG&E infrastructure requires minimal water for operation and would not require decommissioning water use, the conclusions of the Project-specific water supply assessment are reliable for determining that sufficient water supply exists to serve this component of the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years. Therefore, the impacts of PG&E infrastructure would be less than significant with respect to criterion b).

As described above, portable restrooms would be provided and serviced by licensed sanitary wastewater providers during all phases of the Project, including construction and operation of the PG&E infrastructure. The restroom facilities described above that would be connected to an OWTS constructed as part of the Project may be used for the workforce operating and/or maintaining the PG&E infrastructure. Therefore, the incremental contributions of the PG&E infrastructure component to wastewater treatment associated with the Project would have no impact with respect to criterion c).

Construction of the PG&E infrastructure would generate solid waste consistent with the types of solid waste associated with construction of the solar facility and ESS. Given the nature of the PG&E infrastructure component, O&M activities would not be anticipated to create solid waste. The additional contribution of the PG&E infrastructure component to the solid waste generated by the solar facility and ESS would be incremental. Therefore, it could be reasonably accommodated by the landfill and would not contribute significantly to the generation of 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. Impacts would be less than significant under criteria d) and e).

3.19.4 Cumulative Analysis

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Significant cumulative impacts related to utilities and service systems could occur if the incremental impacts of the Project would combine with the incremental impacts of one or more of the cumulative projects identified in Table 3.1-1, *Cumulative Projects List*. The projects presented in Table 3.1-1 are within a 15-mile radius of the Project site.

The geographic scope of the analysis of cumulative effects includes the service areas of the utility or service systems that would provide service to the Project site, as well as the service areas of the utility or service systems that would provide service within the 15-mile radius of the Project site. The time frame during which the Project could contribute to cumulative utilities and service system effects includes the 35-year term of the unclassified conditional use permit period from the moment on-site activities begin to the conclusion of post-Project site restoration activities. The potential cumulative impacts of implementation of the Project (solar facility, ESS, and PG&E infrastructure) on utilities and service systems are evaluated below.

Impact 3.19-5: The Project would not cause a cumulatively considerable contribution due to relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. (*Less-than-Significant Impact*)

As analyzed in Impact 3.19-1 above, the Project's incremental impacts related to the relocation or construction of new or expanded water, wastewater, stormwater, electrical power, and telecommunications facilities would be less than significant. These facilities proposed as part of the Project could result in cumulatively considerable environmental impacts that are discussed throughout this Draft EIR. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, could involve relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, or telecommunication facilities that could cause significant environmental effects.

Water Facilities

As summarized in Impact 3.19-1, the Project would not require connections to existing water and sewer utilities. The Project would introduce a new use of groundwater from the Pleasant Valley Subbasin, replacing existing agricultural irrigation demands on the Project site. The Project proposes to improve an existing well in accordance with the California Well Standards Ordinance and Fresno County's Well

Permitting Program. It would not require connections to existing utilities, nor would it affect the service of existing utility providers within the county. Like the Project, the cumulative projects may improve existing groundwater wells to meet water demands, or depending on their locations, may require connections to existing utilities. The laws, regulations, and ordinances governing existing and/or new groundwater wells would apply to all cumulative projects. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would not result in a significant adverse cumulative environmental effect. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, the PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Wastewater Facilities

As summarized in Impact 3.19-1, no wastewater service is currently provided to the Project site. While portable restrooms would be provided, the O&M services and control services buildings would include an OWTS that would be designed and constructed according to Fresno County requirements. Like the Project, the cumulative projects may require construction of on-site septic systems. The laws, regulations, and ordinances governing OWTS construction would apply to all cumulative projects that also include an OWTS. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would not result in a significant adverse cumulative environmental effect. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, the PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Stormwater Facilities

As summarized in Impact 3.19-1, the Project would include a stormwater drainage system that would include on-site detention or retention basins that would serve to retain stormwater runoff and meet County requirements that no increase in off-site drainage occur. Like the Project, the cumulative projects may construct stormwater drainage systems that would include temporary erosion control sediment basins and/or permanent detention ponds to manage stormwater. The Construction General Permit requirements that apply to the Project would also apply to a stormwater drainage system. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would not result in a significant adverse cumulative environmental effect. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, the PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Electrical Power Facilities

As summarized in Impact 3.19-1, the Project itself is a renewable energy project that involves the construction, operation, maintenance, and decommissioning of a solar facility and ESS, and construction and operation of PG&E infrastructure to accommodate the Project. No electrical services would be required during construction and decommissioning. During operation, the Project would consume electricity when not powered by energy generated on-site. Electric facilities and connections proposed as part of the Project could result in cumulative environmental impacts that are discussed throughout this Draft EIR.

Like the Project, the cumulative projects may require energy for operations and could require electrical services for construction and/or decommissioning (if applicable). However, the incremental impacts of the Project combined with the impacts of other projects in the area would not result in a significant adverse cumulative environmental effect. Therefore, the Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Telecommunications Facilities

As summarized in Impact 3.19-1, the Project would require telecommunication facilities, the construction of which would be subject to the conditions in the Construction General Permit. The cumulative impacts of the telecommunications-related components of the Project are discussed throughout this Draft EIR. Like the Project, the cumulative projects could require new or expanded telecommunications facilities, the relocation and/or construction of which would also be subject to the Construction General Permit, if construction would disturb more than 1 acre of soil. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would not result in a significant adverse cumulative environmental effect. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.19-6: The Project would not cause a cumulatively considerable contribution related to sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. (*Less than Significant with Mitigation Incorporated*)

As analyzed in Impact 3.19-2, the Project's incremental impacts related to sufficiency of water supplies available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years would be less than significant with the incorporation of Mitigation Measure 3.19-1, which requires confirmation of future water supply availability (post 2065) in order for the permitted use to be continue as proposed (through 2069). As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, would require water for Project construction, O&M, and decommissioning (if applicable). Like the Project, each cumulative project would require the preparation of a Project-specific water supply assessment to determine whether sufficient water supply is available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would not have a cumulatively considerable contribution to a cumulative impact on water supplies. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

The PG&E infrastructure footprint would be approximately 6 acres and would require only a small portion of the anticipated construction water for the Project and very little water during operations. The water demand for the PG&E infrastructure would be substantially less than the existing land uses at the

site. Like the PG&E infrastructure, each cumulative project would require the preparation of a Project-specific water supply assessment to determine whether sufficient water supply is available to serve the Project and reasonably foreseeable future development during normal, single dry, and multiple dry years. Therefore, the incremental impacts of the PG&E infrastructure combined with the impacts of other projects in the area would not have a cumulatively considerable contribution to a cumulative impact on water supplies. The PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: Implement Mitigation Measure 3.19-1.

Impact 3.19-7: The Project would not cause a cumulatively considerable contribution due to a determination by the wastewater treatment provider that 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. (*Less-than-Significant Impact*)

As analyzed in Impact 3.19-1, the Project's incremental impacts related to the determination by the wastewater treatment provider that 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 would be less than significant. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, could require construction of an OWTS that would be operated and maintained consistent with state and County requirements. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would not contribute to wastewater that would need to be treated at a wastewater treatment facility. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, the PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.19-8: The Project would not cause a cumulatively considerable contribution to the generation of solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, and would not otherwise impair the attainment of solid waste reduction goals. (*Less-than-Significant Impact*)

As analyzed in Impact 3.19-3, the Project's incremental impacts related to the generation of solid waste in excess of state or local standards or the capacity of local infrastructure or otherwise related to the impairment of attainment of solid waste reduction goals, would be less than significant. Solid waste generated after the closure of nearby landfills (after 2031) would be hauled to another approved facility with capacity. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, could generate primarily non-hazardous solid waste during construction, O&M, and decommissioning. Potential cumulative impacts on landfill capacity would affect the area served by the Avenal and American Avenue landfills.

As noted in Section 3.19.1.3, *Regulatory Setting*, the California Integrated Waste Management Act requires Fresno County to identify an area for the location of new solid waste transformation or disposal facilities if it determines that the existing landfill capacity will be exhausted within 15 years. It is

anticipated that in compliance with the California Integrated Waste Management Act, the County would have at least 15 years of remaining solid waste (landfill) capacity at the time of Project decommissioning and site reclamation, and thus that Project-caused solid waste could be disposed of within the limits of available permitted capacity.

Like the Project, the cumulative projects would be subject to the CALGreen Code and the Fresno County C&D Debris Recycling Program's waste diversion and recycling requirements, which are intended to assist the County in complying with California's solid waste reduction goals and emphasis on recycling. With the assumed compliance with the Fresno County C&D Debris Recycling Program's requirements, the solid waste capacity of existing landfills is not expected to be exceeded, and the Project's incremental contribution to capacity concerns would not be a cumulatively considerable contribution to any significant cumulative effect. Therefore, the Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, the PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

Impact 3.19-9: The Project would not cause a cumulatively considerable contribution related to compliance with federal, state, and local management and reduction statutes and regulations related to solid waste. (*Less-than-Significant Impact*)

As analyzed in Impact 3.19-4, the Project's incremental impacts related to compliance with federal, state, and local management and reduction statutes and regulations related to solid waste would be less than significant. As noted in Table 3.1-1 in Section 3.1, *Introduction to Environmental Analysis*, the cumulative scenario includes multiple projects that, like the Project, would be required to comply with the CALGreen Code and the Fresno County C&D Debris Recycling Program, which are intended to assist the County in compliance with the solid waste reduction goals of AB 939. Therefore, the incremental impacts of the Project combined with the impacts of other projects in the area would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. The Project's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant. For the same reasons, the PG&E infrastructure's contribution to any related significant cumulative effect would not be cumulatively considerable, and this impact would be less than significant.

Mitigation: None required.

3.19.5 References

CalRecycle (California Department of Resources Recycling and Recovery). 2023. 2019 and 2022 CALGreen Construction Waste Management Requirements. Available: https://calrecycle.ca.gov/. Accessed September 6, 2024.

CalRecycle (California Department of Resources Recycling and Recovery). 2024a. SWIS Facility/Site Activity Details, Avenal Regional Landfill (16-AA-0004). Available: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3755?siteID=898. Accessed September 6, 2024.

CalRecycle (California Department of Resources Recycling and Recovery). 2024b. SWIS Facility/Site Activity Details, American Avenue Disposal Site (10-AA-0009). Available: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4535?siteID=352. Accessed September 6, 2024.

Central Valley RWQCB (Central Valley Regional Water Quality Control Board). 2018. *Water Quality Control Plan for the Tulare Lake Basin*. Third Edition. Revised May 2018. Available: https://www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/tularelakebp_201805.pdf. Accessed August 21, 2024.

CPUC (California Public Utilities Commission). 2025. *General Order 131-E. Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California*. Available: https://www.cpuc.ca.gov/-/media/cpuc-website/proceedings-and-rulemaking/documents/general-orders/go-131-e.pdf. Accessed May 23, 2025.

DTSC (California Department of Toxic Substances Control). 2010. *Universal Waste Fact Sheet*. January 2010. Available: https://www.acgov.org/forms/aceh/DTSC_FactsheetUniversalWaste.pdf. Accessed September 6, 2024.

DWR (California Department of Water Resources). 2024. California Well Standards, Combined. Available: https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Standards/Combined-Well-Standards. Accessed September 6, 2024.

Fresno County. 2024a. *Fresno County General Plan Policy Document. General Plan Review*. Final. February 2024. Available: fcgpr_general-plan_county_final_2024_02.pdf. Accessed September 6, 2024.

Fresno County. 2024b. Well Permitting Program. Available: https://www.fresnocountyca.gov/Departments/Public-Health/Environmental-Health/Water-Surveillance-Program/Well-Permitting-Program. Accessed September 6, 2024.

Fresno County. 2024c. Construction and Demolition Debris Recycling. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/resources-and-parks-division/recycling-and-solid-waste-disposal/construction-. Accessed September 6, 2024.

Mid Valley Disposal. 2024. Mid Valley Disposal, Service Area Map. Available: https://www.midvalleydisposal.com/municipal-services. Accessed September 6, 2024.

PG&E (Pacific Gas and Electric Company). 2019. PG&E Network. Available: https://www.arcgis.com/home/item.html?id=3943d9c9f67f4cbfb600e7b88225e7f2. Accessed September 6, 2024.

PG&E (Pacific Gas and Electric Company). 2024. Company Profile. Available: https://www.pge.com/en/about/company-information/company-profile.html. Accessed September 6, 2024.

Pleasant Valley GSA (Pleasant Valley Groundwater Sustainability Agency). 2024. *Pleasant Valley Groundwater Sustainability Plan*. February 22, 2022. Revised July 9, 2024. Prepared with Provost & Pritchard Consulting Group and Kenneth D. Schmidt and Associates. Available: https://sgma.water.ca.gov/portal/service/gspdocument/download/10265. Accessed August 21, 2024.

PVWD (Pleasant Valley Water District). 2024a. History. Available: https://pleasantvalleywaterdistrict.com/about/history/. Accessed September 6, 2024.

PVWD (Pleasant Valley Water District). 2024b. Quick Facts. Available: https://pleasantvalleywaterdistrict.com/about/fact-sheets/. Accessed September 6, 2024.

USA North. 2021. *Underground Service Alert, Excavation Handbook*. Revised October 20, 2021. Available: https://usanorth811.org/images/pdfs/Handbook-Ca.pdf. Accessed September 6, 2024.

Waste Connections. 2024. Avenal Landfill. Available: https://www.wasteconnections.com/avenal-landfill/. Accessed September 6, 2024.

3.20 Wildfire

This section identifies and evaluates issues related to wildfire: specifically, the potential to impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risks, or 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. 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 wildfire (**Appendix A**, *Scoping Report*).

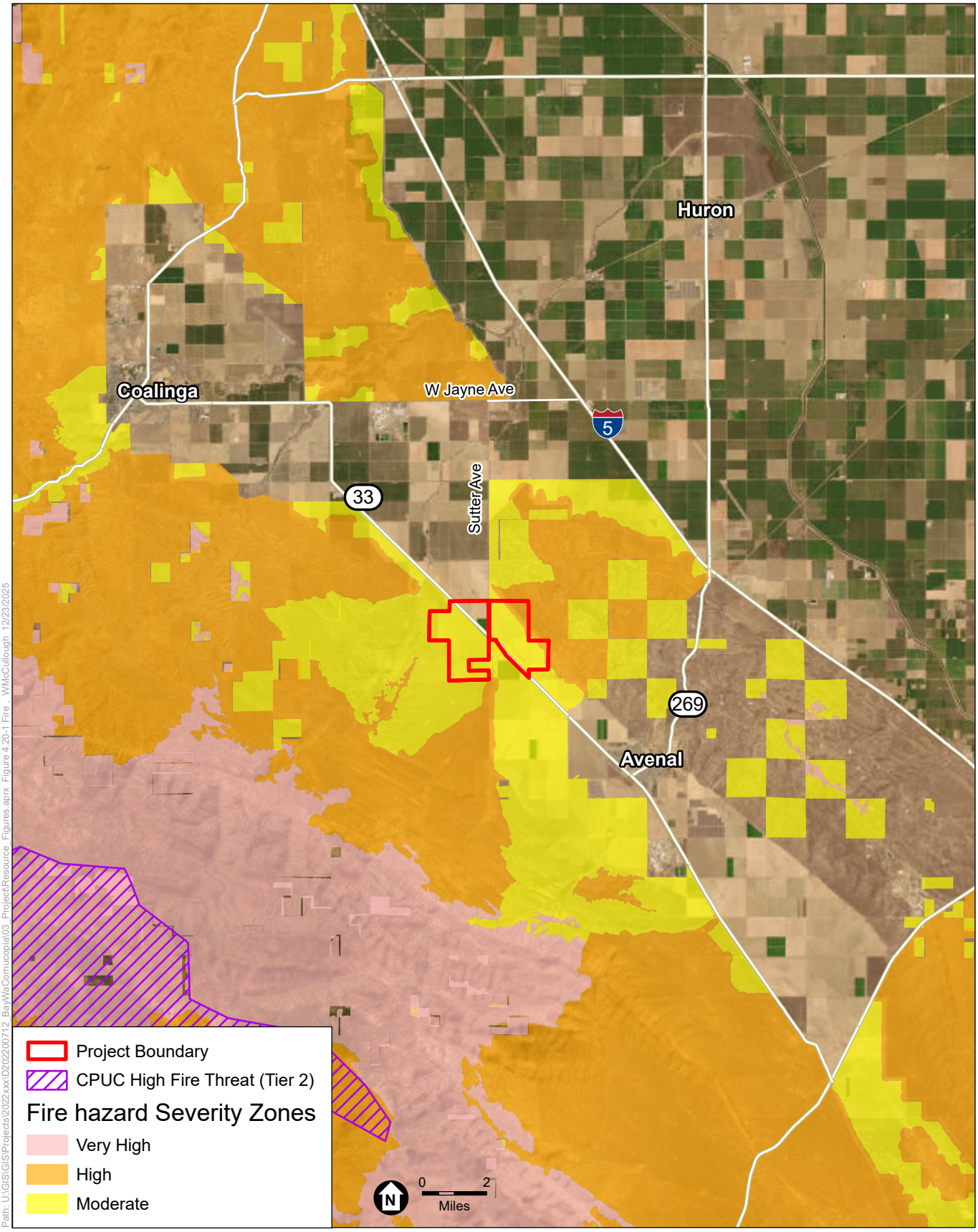
This analysis is based in part on information found in the project description, as well as a site-specific biological resources report (**Appendix F**) and the Sheep Grazing Report (**Appendix B.3**). The preparers of this Draft EIR identified in Chapter 6, *Report Preparation*, independently reviewed these sources and other materials prepared by or on behalf of the Applicant and determined them to be suitable for reliance on in the preparation of this Draft EIR.

3.20.1 Setting

3.20.1.1 Study Area

Wildfire is defined as an unplanned, unwanted wildland fire that can result from human-made or natural causes (Government Code §51177). Wildland fires affect grass, forest, and brushlands, as well as any structures on these lands, creating potential for injury, loss of life, and property damage. Fuel sources, topography, and climate are the primary factors influencing the degree of risk. For this analysis of wildfire risk, emergency response and evacuation, and post-fire pollution and runoff-related impacts, the study area includes the Project site and the surrounding parcels and related access roads, structures, and vegetation.

As discussed in Section 3.20.1.3, *Regulatory Setting*, the State of California (through the California Department of Forestry and Fire Protection [CAL FIRE]) has the primary responsibility for the prevention and suppression of wildland fires in State Responsibility Areas (SRAs). CAL FIRE has designated and mapped Fire Hazard Severity Zones (FHSZ) in SRAs, which range from “moderate” to “very high,” to indicate risk and severity of wildfire. The Project would be located mostly on lands classified as Moderate FHSZ partially in an SRA, with lands partially in a High FHSZ bordering the eastern side of the Project boundary (CAL FIRE 2023). **Figure 3.20-1**, *Fire Hazard Severity Zones*, depicts the FHSZs and California Public Utilities Commission (CPUC) high fire threat areas on and around the Project site.



Path: U:\GIS\GIS\Projects\2022xxx\D2022007\2_BayWaCornucopia\03_Project\Resource_Figures.aprx Figure 4.20-1 Fire_WMcCullough 12/23/2025

Source: ESA, 2024; CalFire, 2024; CPUC, 2024

Cornucopia Hybrid Project

Figure 3.20-1
Fire Hazard Severity Zones

ESA

3.20.1.2 Environmental Setting

Wildland fire behavior is 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 factors, described below, influences the degree of risk if a fire occurs.

Topography

Topography describes the shape of the land and can include descriptions of elevation (height above sea level), slope (the steepness of the land), aspect (the direction a slope faces), and features such as canyons and valleys. Topography can strongly influence fire behavior, including the speed at which a fire moves through an area: Fire typically moves more quickly when it travels uphill than when it travels either downhill or across flat terrain. As heat rises in front of a fire, it preheats and dries upslope fuels, resulting in their rapid combustion (Bennett 2017).

Fresno County, situated in California's San Joaquin Valley, spans approximately 6,000 square miles and is geographically positioned between the Sierra Nevada to the east and the Coast Ranges to the west. The county's topography varies from near sea level in the west to more than 14,000 feet at the Sierra Nevada peaks, contributing to diverse climate and ecological zones (Fresno COG 2024). The county's topography is characterized by broad, flat valley floors that generally slope from southeast to northwest; foothills and moderately high mountains (Coast Ranges) in the west; and 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. There are two major rivers in Fresno County, both which originate in the Sierra Nevada: the San Joaquin and Kings rivers. The Project site is situated in the southwestern portion of Fresno County and can be categorized as dry and flat valley grazing land. The surrounding areas are also relatively flat and consist primarily of grazing land, cultivated and fallow agriculture land, and undeveloped land.

Vegetation/Fuels

Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel sources are diverse and include dead tree leaves, twigs, branches, and standing trees; live trees and brush; and dry grasses. Additional fuel sources can include human-made structures such as homes, buildings, and other associated combustible materials. The amount of fuel—known as *fuel loading* and expressed in tons per acre—and its vertical and horizontal arrangement affect fire intensity and the ability of surface flames to spread. The size and the moisture and chemical content of fuels also influence combustion and fire behavior (Bennett 2017).

The Project site consists of agricultural and shrub vegetation classifications. Grasses occur on-site, including wild oats and annual brome grasslands. Sparse weed vegetation, including black mustard, London rocket, prickly Russian thistle, great brome, and slender oat, occurs on fallow land of the Project site. Russian thistle, annual bursage, great brome, slender wild oat, prickly lettuce, and California broomsage occur on ruderal parts of the Project site. No forests exist on the Project site, but there is a hedgerow of ornamental black poplar trees along the southernmost Project site boundary, as well as a pistachio orchard in the buffer zone to the south (Appendix F, *Biological Resources*). Under existing conditions, vegetative fuel loads (e.g., dry grasses and ruderal vegetation) are generally controlled through grazing by sheep. See Section 3.5, *Biological Resources*, for more detail on vegetation in the study area.

Weather/Climate

The weather at the Project site is consistent with typical weather for southwestern Fresno County. The county is in a Mediterranean climate zone, characterized by hot dry summers and sparse rainfall, occurring mainly in winter. Summertime maximum temperatures often exceed 100 degrees Fahrenheit in the San Joaquin Valley. The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. Wintertime high-pressure events can last many weeks, with surface temperatures often lowering into the range of 30 degrees Fahrenheit (Fresno COG 2024).

Fire History

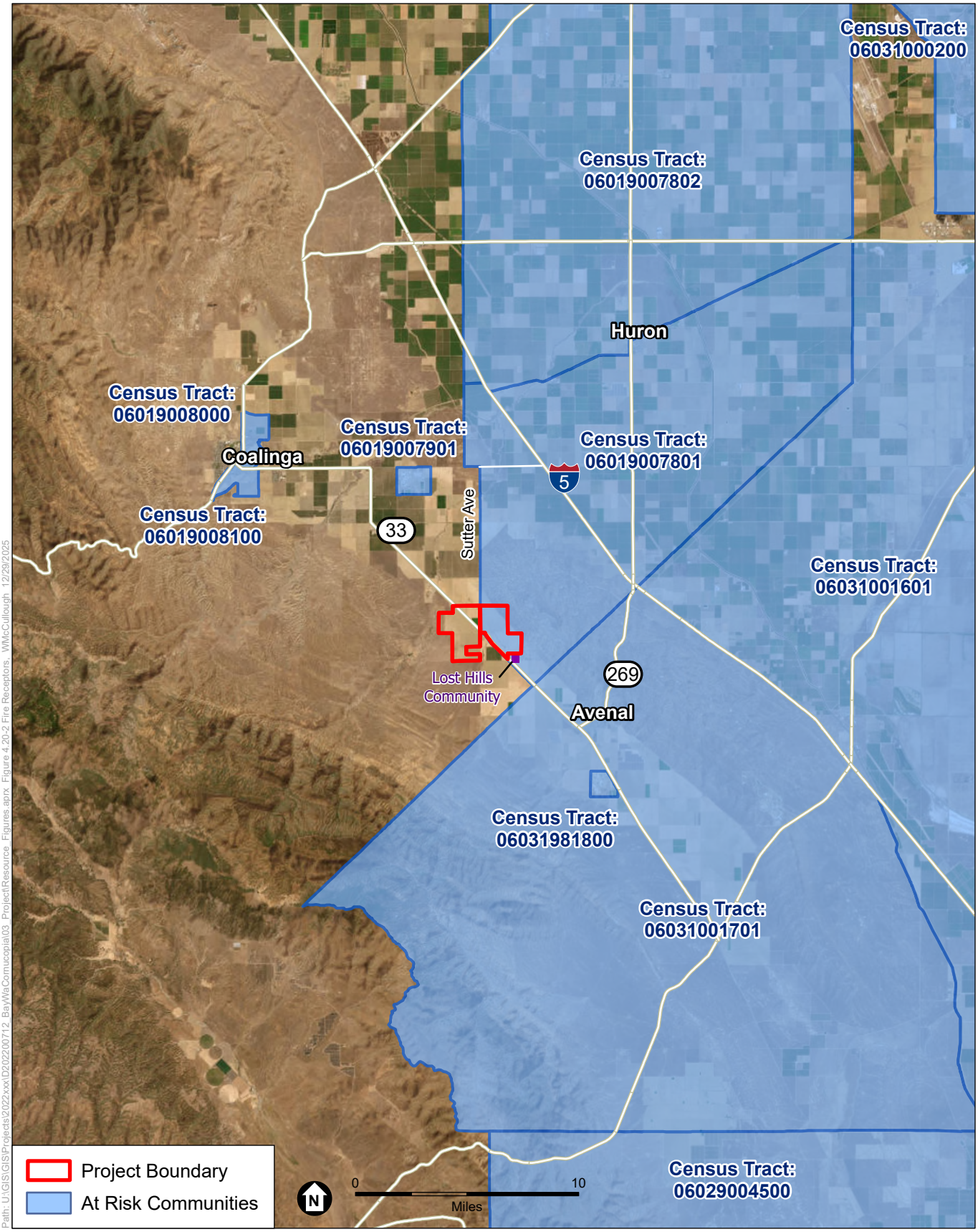
Wildfire is an ongoing concern in Fresno County, particularly in the foothills and on forested lands. Although the Project site does not contain this type of terrain, it is located mostly on lands with Moderate FHSZ, with portions of the site in a High FHSZ (CAL FIRE 2023). Historically, the fire season extends from June through October of each year during the hot, dry months (FCFPD 2023).

The Project site falls within the jurisdiction of Battalion 14 of the CAL FIRE Fresno-Kings Unit. Station 94 is nearest to the Project site, located at 24125 W. Dorris Avenue in Coalinga (FCFPD 2024). Battalion 14 consists of 563,076 acres of state responsibility land under direct CAL FIRE protection. It also has 151,967 acres of U.S. Bureau of Land Management Direct Protection Area. CAL FIRE provides fire protection for most of the U.S. Bureau of Land Management property within the battalion's jurisdiction. The total CAL FIRE Direct Protection Area of the battalion is 715,043 acres (CAL FIRE 2024). In addition, the Avenal Fire Department, located at 516 E Fresno Street in Avenal, is contracted with CAL FIRE. The Avenal Fire Department is located approximately 5 miles southeast of the Project site, and may be required to respond in the event of an emergency (Google Earth 2025).

Over the past 50 years, the Fresno-Kings Unit has had a history of large, damaging fires with a low frequency of occurrence. The fire occurrences and size of fire are often associated with prolonged drought conditions and with isolated extreme weather conditions. In reviewing the large fire occurrences in the Fresno-Kings Unit, they can be grouped into the two different geographic areas: the Eastern Division and the Western Division. The Project site is in the Western Division. The largest fires in the Western Division were the 2017 Garza Fire at 48,886 acres, the 2020 Mineral Fire at 29,666 acres, and the 2024 Boone Fire at 17,600 acres, all within the same jurisdiction as the Project site (CAL FIRE 2024). See Section 3.16, *Public Services*, for analysis of fire response to the Project site.

Wildfire and Air Quality

Wildfires can exacerbate air quality problems, particularly during the summer months when ambient air quality is already low (Fresno County 2024a). Wildfires emit volatile organic compounds, oxides of nitrogen (NOx), and particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), which present immediate health risks to populations. In addition, the dispersion of smoke from wildfires can cause these pollutants to travel far from the origin. Wildfire smoke significantly raises $PM_{2.5}$ and ozone levels, leading air pollution metrics that exceed health standards (Jaffe and Lee 2024). Specifically, poor air quality and subsequent exposure to these pollutants can cause asthma attacks, coughing, and chest pain (CDC 2024). See Section 3.4, *Air Quality*, for additional discussion of NOx, $PM_{2.5}$, and air pollutant emissions. Census tracts at high risk for exposure from these pollutants are indicated on **Figure 3.20-2**, *Sensitive Receptors*, below.



Source: ESA, 2024; CEJST, 2024

Cornucopia Hybrid Project

Figure 3.20-2
Sensitive Receptors

ESA

3.20.1.3 Regulatory Setting

Federal

North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid. NERC develops and enforces reliability standards; annually assesses seasonal and long-term reliability; monitors the bulk power system through system awareness; and educates, trains, and certifies industry personnel.

NERC developed a transmission vegetation management program to improve the reliability of the electric transmission system by preventing outages from vegetation located on transmission rights-of-way and minimizing outages from vegetation located adjacent to rights-of-way; maintaining clearances between transmission lines and vegetation on and along transmission rights-of-way; and reporting vegetation-related outages of the transmission systems. This transmission vegetation management program applies to Pacific Gas and Electric Company's (PG&E's) transmission line–related vegetation management activities in the Project area. These requirements include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while considering 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. These guidelines are set forth in PG&E's Transmission Vegetation Management Standard, which is designed to meet or exceed federal laws and regulations, including NERC (PG&E 2016).

State

California Senate Bill 38

Approved by the Governor in October 2024, Senate Bill 38 amended §761.3 of the California Public Utilities Code to address battery energy storage facilities. Section 761.3(g) requires that each battery energy storage facility in the state have an emergency response and evacuation plan that covers the premises of the battery energy storage facility. It requires the owner or operator of the facility, in developing the plan, to coordinate with local emergency management agencies, unified program agencies, and local first response agencies. Through this state-mandated local program, Senate Bill 38 requires the owner or operator to submit the plan to the county.

Strategic Fire Plan for California

The CAL FIRE Strategic Plan 2024: Transforming Tomorrow is CAL FIRE's most current 5-year strategic plan. It builds on the goals and objectives of the 2019 strategic plan. Developed by the State Board of Forestry and Fire Protection, the Strategic Fire Plan outlines goals and objectives to implement CAL FIRE's overall policy direction and vision. The 2024 plan demonstrates CAL FIRE's goals to (1) attract, hire, and retain quality employees, (2) ensure all employees understand how the Department's various programs and job duties contribute towards efficiently achieving the CAL FIRE mission, (3) promote a culture that values equitable access, embraces diverse backgrounds and experiences, and actively removes barriers to cultivate a more inclusive environment, (4) Leverage technology to modernize internal human resources processes and create efficient and effective innovative solutions to promote, support, and enhance the employee experience, (5) strengthen the Department's physical and

digital infrastructure and streamline equitable access to information across core services, and (6) identify core capabilities and strengthen operational capacity (CAL FIRE 2024a).

CAL FIRE's jurisdiction extends the length and breadth of the state with an emergency response and resource protection capability of 6,100 full-time fire professionals, foresters, and administrative employees; 2,600 seasonal firefighters; 105 California Conservation Corps firefighters; 600 Volunteers in Prevention; and 3,500 inmates and wards (CAL FIRE 2019). CAL FIRE provides direction for fire prevention and enforcement within SRAs 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). As mentioned in Section 3.20.1.2, *Environmental Setting*, the Project site is located within the Fresno-Kings Operational Unit under Battalion 14 and would follow the goals and objectives outlined in the Fresno-Kings Unit Strategic Fire Plan (CAL FIRE 2024b).

2024 Fresno-Kings Unit Strategic Fire Plan

The Fresno-Kings Unit Strategic Fire Plan seeks to achieve the goals and objectives of California's 2019 Strategic Fire Plan. This plan is a comprehensive strategic fire plan, specific to the Fresno-Kings Unit, that addresses the ever-changing conditions of the fire hazard environment. The Fresno-Kings Unit's fire plan is integrated into one plan covering the SRA and the Local Responsibility Area (LRA) within Fresno and Kings counties, with CAL FIRE and the Fresno County Fire Protection District (FCFPD). This document, updated yearly, reports the various accomplishments made to meet the goals and objectives as outlined by the Fresno-Kings Unit and the 2019 California Strategic Fire Plan.

The Fresno-Kings Unit has responsibility for protecting 951,832 acres of SRA and 1,527,022 acres of LRA under a cooperative fire protection agreement with the FCFPD, for a total responsibility area of 2,478,834 acres. The priorities and goals for this unit, as outlined in the plan, include conducting the Defensible Space Inspection Program, maintaining and improving fire control roads, conducting vegetation management through prescribed burns in Los Gatos Canyon and Warthan Canyon, managing oil field power line vegetation, and improving roadside fire prevention signs (CAL FIRE 2024b).

California State Emergency Plan

Pursuant to the Emergency Services Act (Government Code §8550 et seq.), California has developed an emergency plan to coordinate emergency services provided by federal, state, and local government agencies and private persons. Rapid response to incidents involving wildfire and other natural and/or human-caused incidents is an important part of the plan, which is administered by the Governor's Office of Emergency Services. The Governor's Office of Emergency Services coordinates the responses of other agencies, including the U.S. Environmental Protection Agency, California Environmental Protection Agency, California Highway Patrol, California Department of Fish and Wildlife, regional water quality control boards, local air districts, and local agencies (Cal OES 2023).

The California State Emergency Plan plays a key role in guiding state agencies, local jurisdictions, and the public on emergency management. It describes the methods for emergency operations, provision of mutual aid, emergency response capabilities of state agencies, resource mobilization, public information,

and continuity of government during an emergency or disaster. Currently, the emergency plan is undergoing an update, which includes:

- An enhanced whole-community planning approach.
- An updated hazards discussion with new information on wildfires, earthquakes, pandemics, severe weather, Public Safety Power Shutoffs, and cyberattacks.
- Additional information on the Fire & Rescue Coordination Center, Air Coordination Group, and Medical and Health Coordination Center.
- Updated information on the Unified Coordination Group.
- An additional section on science and technology in emergency management.
- Updated state agency roles and responsibilities.
- Additional information on Recovery Support Functions and the California Disaster Recovery Framework.

California Department of Forestry and Fire Protection: Fire Hazard Severity Zones

Public Resources Code §§4201–4204 require CAL FIRE to prepare fire hazard severity zone maps for all lands within SRAs and to make recommendations for such zones in LRAs. Each zone encompasses relatively homogeneous lands and is to be based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified as a major cause of wildfire spread. These maps are developed using a science-based and field-tested model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior. Many factors are considered such as fire history, existing and potential fuels (natural vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area. There are three levels of hazard in the SRAs: moderate, high, and very high. Wildfire is an ongoing concern in Fresno County, particularly among the foothills and forested lands. Although the Project site does not contain this type of terrain, the study area is located mostly in a Moderate FHSZ and partially in a High FHSZ (CAL FIRE 2023).

Public Resources Code Section 4291

Public Resources Code §4291 identifies fire safety provisions 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 include maintaining defensible space; restricting the use of equipment that may produce a spark, flame, or fire; requiring the use of spark arrestors on equipment that has an internal combustion engine; specifying requirements for the safe use of gasoline-powered tools in fire hazard areas; and specifying fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

California Public Utilities Commission–Designated Wildfire Hazard Zones

Pursuant to its fire safety rulemaking, 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 below) would be implemented because of the elevated risk for power line fires. The CPUC High Fire Threat District Map identifies elevated risk for fires associated with utilities based on criteria such as fire hazards associated with historical power line–caused wildfires and current fuel conditions. The map 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 2021). The nearest CPUC High Fire Threat District is a Tier 2 zone approximately 12 miles southwest of the Project site (Figure 3.20-1).

California Public Utilities Commission General Orders

General Order 95

Revised January 2020, this General Order outlines rules for construction of overhead electric lines. CPUC General Order 95 applies to work conducted by PG&E and the other investor-owned utilities, 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 has promulgated various rules to implement the fire safety requirements of General Order 95, including the following (CPUC 2020):

- **Rule 18A:** Requires utility companies to 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:** Requires that lines be inspected frequently and thoroughly. It also requires that lines temporarily out of service be inspected and maintained.
- **Rule 35:** Requires that vegetation management activities be performed to establish necessary and reasonable clearances. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order. Specifically, this applies to communication and electric supply circuits, energized at 750 volts or less, which must be kept clear of vegetation in new construction and when circuits are reconstructed or repaired.
- **Rule 38:** Establishes minimum vertical, horizontal, and radial clearances of wires from other wires.

General Order 165

General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform "patrol" inspections, which are defined as a simple visual inspection of utility equipment and structures (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 General Order 165 must submit an annual report of its inspections for the previous year under penalty of perjury (CPUC 2017a).

General Order 166

General Order 166 Standard 1.E requires each investor-owned utility, such as PG&E, to develop a fire prevention plan describing measures that the utility will implement to mitigate the threat of power line fires generally. Additionally, this standard requires that investor-owned utilities outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning event in a high-fire-threat area. Fire prevention plans formulated by investor-owned utilities 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 2017b).

General Order 131-E

The California Public Utilities Commission would have sole and exclusive jurisdiction over Pacific Gas and Electric Company's (PG&E's) construction and O&M of the PG&E infrastructure and improvements needed to connect the Project to the grid because it regulates activities undertaken by PG&E and the other investor-owned public utilities in the state. PG&E's work (as regulated by the commission) would not be subject to the County's wildfire-related requirements. However, the California Public Utilities Commission's General Order No. 131-E, §XI.B, would require PG&E to "consult with local agencies regarding land use matters."

PG&E Company Emergency Response Plan

Updated in 2019, the PG&E Company Emergency Response Plan assists PG&E personnel with safe, efficient, and coordinated response to emergency incidents involving gas or electric generation, distribution, storage, and/or transmission systems. The Company Emergency Response Plan applies to PG&E service territory and the people who work in those systems. This all-hazards approach applies to any natural disaster or human-caused situation (e.g., fires, floods, storms, earthquakes, terrorist attack, or cyberattack) that threatens life and property or requires immediate action to protect or restore service or critical business functions to the public. The Company Emergency Response Plan also outlines the operational structure, which includes a Wildfire Safety Operations Center that operates 24 hours a day during wildfire season (PG&E 2019).

PG&E Wildfire Mitigation Plan

Updated in April 2024, this plan outlines PG&E's Community Wildfire Safety Program, with the overarching goals to reduce ignition risk, improve operational mitigations such as Public Safety Power Shutoffs, and improve system resilience. In this updated plan, PG&E employs strategies to aggressively reduce wildfire risk in the High Fire Threat Districts and High Fire Risk Areas through undergrounding, updating management and mitigation planning, and addressing vegetation risk more efficiently through new risk-informed mitigation initiatives (PG&E 2024).

2022 California Fire Code

The most recent fire code, the 2022 California Fire Code, is contained within Title 24, Part 9 of the California Code of Regulations. Based on the International Fire Code, the California Fire Code was created by the California Building Standards Commission and regulates 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 use a hazards classification system to determine the appropriate measures to incorporate to protect life and property. The 2022 California Fire Code is an enforceable set of regulations consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and explosion; dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; and hazardous conditions in the use or occupancy of buildings or premises. It also contains provisions to assist emergency response personnel.

Section 1207 of the 2022 California Fire Code addresses design, construction, operation and maintenance (O&M), decommissioning, and hazard response (including for both fire and spill hazards) for electrical energy storage systems (ESSs). Fresno County has adopted the 2022 version of the California Fire Code. Therefore, the County has enforcement authority for the California Fire Code for projects under its jurisdiction.

Section 1207 requires ESSs to meet Underwriters Laboratories (i.e., UL) standard UL 9540, which is a safety standard specific to ESSs. For ESSs connected to a utility grid, including this Project, the UL 9540 standard also extends to the equipment used to make that connection. This standard pertains to fire and explosion safety concerns associated with ESSs, including the safety of the storage (battery) component during operation, fire detection, and fire mitigation effectiveness in enclosed areas. Fresno County would require full compliance with the California Fire Code and all applicable standards for final design and implementation of the Project.

Regional and Local

Fresno County

Fresno County 2024 General Plan

Adopted by the Board of Supervisors in February 2024, the Health and Safety Element of the Fresno County General Plan sets out goals and policies for ensuring the maintenance of a healthy and safe physical environment. The following policies of the Health and Safety Element related to fire hazards are applicable to the Project (Fresno County 2024b):

> ***Policy HS-A.1: Operational Area Master Emergency Service Plan.*** The County shall, through the Fresno County Operational Area Master Emergency Services Plan and the Fresno County Multi-Hazard Mitigation Plan, maintain the capability to effectively respond to emergency incidents, including maintenance of an emergency operations center.
>
> ***Policy HS-A.2: Multi-Jurisdictional Hazard Mitigation Plan.*** In coordination with cities, special districts, and other State and Federal agencies, the County shall maintain the Fresno County Multi-Jurisdictional Hazard Mitigation Plan to identify and mitigate, to the extent feasible, natural and human-made hazards within the county.
>
> ***Policy HS-A.7: Building Design.*** The County shall review the design of all buildings and structures in the Very High Fire Hazard Severity Zones and State Responsibility Areas to ensure they are designed and constructed to State and local regulations and standards as part of the building permit plan check process.
>
> ***Policy HS-A.12: Access/Evacuation Routes.*** Establish minimum standards for evacuation, including in the Very High Fire Hazard Severity areas, in the Emergency Operations Plan and continuously reassess access and evacuation route capacity and put mitigation measures and improvement plans in place if needed.
>
> ***Policy HS-B.1: Fire Hazards Review.*** 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.2: Minimize Fire Hazard Risk Design.*** The County shall ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards by increasing resistance of structures to heat, flames, and embers. The County shall review current building code standards and other applicable statutes, regulations, requirements, and guidelines regarding construction, and specifically the use and maintenance of non-flammable materials (both residential and commercial) and consider adopting amendments to Title 15 of the County Ordinance Code (Building and Construction) to implement appropriate standards. Special consideration shall be given to the use of fire-resistant construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas of steep slopes.

Policy HS-B.4: Fire Risk Management. The County shall require that new discretionary development including residential subdivisions and large commercial proposals in high-fire hazard areas have fire-resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

Policy HS-B.5: Landscape Features. In consultation with the local fire agency and CalFire, the County shall require structures to be sited to maximize low-flammability landscape features to buffer against wildfire spread. Consultation with the local fire agency will be necessary to make this determination.

Policy HS-B.7: Fire and Emergency Vehicle Access. The County shall require new discretionary development projects 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. The County shall implement feasible recommendations in AB2911 [Assembly Bill 2911] Office of the State Fire Marshall Subdivision Survey Reports, which survey subdivisions without a secondary means of egress routes for evacuation and other fire safety factors.

Policy HS-B.8: Fire Risk Management Coordination. The County shall work with local fire protection agencies, local wildfire mitigation groups, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression and in managing wildland fire hazards.

Policy HS-B.10: Fire Agency Review of Development Proposals. The County shall refer development proposals in the Very High Fire Hazard Severity Zones and State Responsibility Areas of 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: Foothill and Mountain Year-Round Fire Protection. The County shall work with Cal Fire and local fire agencies to establish development requirements for year-round fire protection in foothill and mountain areas having existing or proposed population concentrations that need structural fire protection, and for agricultural land uses located in and bordering fire hazard zones.

Policy HS-B.14: Minimum Fire Flow Water Systems. The County shall require new discretionary development to have water systems that meet fire flow requirements as determined by applicable California Fire Code requirements and/or National Fire Protection Association (NFPA) standards under the authority of the Chief Fire Code Official and as referenced in County Ordinance Code. Where minimum fire flow is not available to meet these standards, alternate fire protection measures, including sprinkler systems and on-site water supply or storage, shall be identified, and may be incorporated into development if approved by the appropriate fire protection agency. The County shall require that all public water providers maintain the long-term integrity of adequate water supplies and flow to meet fire suppression needs.

Policy HS-B.15: Fire Protection. The County shall ensure that any new development will have adequate fire protection, including proximity to adequate emergency services, adequate provisions for fire flow and emergency vehicle access and fire hardened communication, including high speed internet service.

Policy HS-B.19: Site Specific Fire Management Plans. The County shall require all new discretionary development consisting of major residential subdivisions and large commercial

projects in the Very High Fire Hazard Severity Zone and State Responsibility Areas to develop site-specific fire management plans to maintain adequate access for emergency vehicles, including two points of access for subdivisions and multifamily developments, address fuel modification and/or incorporation of open space or other defensible space areas, maintain vegetation clearance on public and private roads, and include disclosure requirements to future property owners or residents as required by state law. Require ongoing maintenance and upkeep to be incorporated or recorded as part of building covenants or homeowner covenants, conditions, and restrictions.

Policy HS-B.24: Emergency Vehicle Access. The County shall require all new discretionary development consisting of major residential subdivisions and large commercial projects to provide, and existing development to maintain, adequate access for emergency vehicles, including two points of access for subdivisions and multifamily developments.

Policy HS-B.25: State Responsibility Areas Fire Safe Regulation. Require development to adhere to standards that meet or exceed Title 14, CCR [California Code of Regulations], Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1299.01) (Fire Hazard Reduction Around Buildings and Structures Regulations) for State Responsibility Areas and/or Very High Fire Hazard Severity Zones.

Fresno County Hazard Mitigation Plan

Fresno County, along with 17 participating jurisdictions, prepared the multi-jurisdictional Fresno County Hazard Mitigation Plan to better protect the people and property of the county from the effects of hazard events. This plan underwent a comprehensive update in 2023–2024, building upon the plan that was originally developed in 2009. This plan demonstrates the community's commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. The goal is to identify and mitigate, to the extent feasible, natural and human-made hazards within the county. These hazards include wildfire (Fresno County 2024a).

Fresno Council of Governments Priority Climate Action Plan

Through close coordination with partner agencies in the Fresno region, especially with the City of Fresno and the San Joaquin Valley Air Pollution Control District, the Fresno Council of Governments assumed the responsibility to lead the region in the development of a regional priority climate action plan. The goals and actions of the plan aim to reduce greenhouse gas emissions across the county (Fresno COG 2024). Closely tied, wildfire is related to these greenhouse gas reductions, as well as environmental justice elements of hazards and risk.

3.20.2 Significance Criteria

The Project, if located in or near a State Responsibility Area or on lands classified as Very High Fire Hazard Severity Zones, would result in significant impacts related to wildfire if it would do any of the following:

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.

3.20.3 Direct and Indirect Effects

3.20.3.1 Applicant-Proposed Measures and Design Features

The Project includes certain actions to reduce the potential significance of initially anticipated environmental impacts related to a variety of resource areas. The full list of actions is provided in Section 2.9, *Applicant-Proposed Measures and Design Features*, in Chapter 2, *Project Description*. Of them, the actions described in Section 2.9.2, *Fire Protection*, and in Section 2.9.10, *Emergency Response Plan*, would reduce potential impacts related to wildfire. Implementation of the actions described in Section 2.9.11, *Compliance with Applicable Laws and Standards*, related to worker training and safe practices could further reduce potential wildfire impacts.

3.20.3.2 Methodology

Wildfire impacts are evaluated within the context of construction, O&M, and decommissioning of the Project. This analysis considers whether the Project's wildfire risk can be effectively lessened through implementation of standard regulatory requirements (e.g., compliance with the CAL FIRE regulations, local fire codes, and the County's General Plan). Consistent with CEQA and CEQA Guidelines Appendix G, the analyses set forth below consider the impacts related to wildfire risk that the Project could have on the surrounding area, not the wildfire-related impacts the surrounding area could have on the Project. The baseline conditions for this analysis of potential wildfire impacts reflect conditions as they existed on the date of the Notice of Preparation published on May 3, 2024.

3.20.3.3 Direct and Indirect Effects of the Project

Solar Facility and Energy Storage System

Criterion a) Whether the Project would substantially impair an adopted emergency response plan or emergency evacuation plan.

Impact 3.20-1: The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. (*Less-than-Significant Impact*)

The Project's proposed solar facility and associated ESS would comply with all Fresno County emergency response plans and emergency evacuation plans. As described in Section 3.20.1.3, *Regulatory Setting*, the Project would be subject to the 2024 State Emergency Plan, the Fresno County Operational Area Master Emergency Services Plan, the Fresno County Multi-Hazard Mitigation Plan, and the Applicant-proposed Emergency Response Plan. These plans and regulations contain frameworks for effective emergency response to incidents such as wildfire.

During construction and decommissioning, excavation and grading of the Project site would occur. This would require medium- and heavy-duty vehicles, which could interfere with emergency response or emergency evacuation procedures. However, given the rural nature of the Project site and its location relative to existing emergency response stations, impacts on emergency response and evacuation during construction and decommissioning would be unlikely. Evacuation routes for the Project site and surrounding area would be identified before construction and coordinated as needed by local law enforcement and emergency service responders during an emergency. State Route (SR) 33—directly adjacent to the Project site—would be suitable for a potential evacuation route. See Section 3.18, *Transportation*, for details regarding traffic management planning. The Project would allow for adequate ingress and egress, with six access points, which would not interfere with the SR 33 thoroughfare. Site access points would comply with requirements established by the FCFPD to ensure adequate emergency access. The expected average workforce of 200–250 construction personnel would likely be drawn from the same metropolitan statistical area as the Project site and thus would already be subject to terms of the County's response plans. The Project would comply with all emergency response policies, plans, and procedures.

O&M activities, which would occur continuously year-round, are not expected to impair emergency access or evacuation plans. Any personnel working on the Project site would be expected to comply with all adopted plans and procedures for emergency response and evacuation. The number of workers on-site would range from 0 to 22, which would not contribute to an excessive burden on nearby emergency response services should an emergency occur. In addition, multiple paved access roads would be accessible to emergency vehicles. Up to 13 entrances would be available, which would allow adequate ingress to and egress from the Project site. Access points on Sutter Avenue would provide access to the substation area as well as the photovoltaic modules, both in compliance with requirements of the FCFPD. Project components, including a photovoltaic solar facility with a 300-megawatt (MW) generating capacity and associated substation, and an ESS with a storage capacity of 300 MW of alternating current (i.e., MW_{ac}), pose an increased risk of ignition relative to the baseline condition. However, should a fire occur, the Project site is within the Fresno-Kings District, and as such it would be subject to conditions within the Fresno-Kings Unit Strategic Fire Plan.

As detailed in Section 2.9, *Applicant-Proposed Measures*, in Chapter 2, the Applicant proposes to develop an emergency response plan in advance of construction. This would entail coordinating with local emergency response personnel and defining roles and responsibilities should a fire occur. This would also be in direct compliance with Public Utilities Code §761.3(g), which requires each ESS to have an emergency response and evacuation plan. Thus, the Project would not interfere with an existing emergency plan and the impact would be less than significant.

Mitigation: None required.

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 3.20-2: The Project would not, 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. (*Less-than-Significant Impact*)

As discussed in Section 3.20.1, *Setting*, the Project site is unpopulated and located in a flat agricultural region with no forested areas in the vicinity. The baseline conditions include grasslands grazed by sheep to reduce fuel fire loads and dry vegetation. Although prevailing winds can be high in the region, there are few ignition sources and low vegetative fuel levels. The site is located mostly on lands classified as Moderate FHSZ partially in an SRA (CAL FIRE 2023). There are no significant slopes or fuel loads in the vicinity that would exacerbate fire risk. Prevailing winds would not be expected to result in conditions of high fire risk that expose Project occupants or nearby residents to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Given the generally flat topography, moderate climate, and sparsely populated area, the risk of the Project creating a wildfire that spreads uncontrollably is low. Thus, the impact would be less than significant.

Should a fire occur, neighboring communities already at higher risk due to exposure to substantial pollution concentrations could be exposed to air pollutants. Wildfires can release large amounts of air pollutants, which can lead to harmful exposure for first responders, project occupants, and nearby communities. Specifically, $PM_{2.5}$ and NO_X are harmful air pollutants that can also originate from wildfires. See Section 3.4, *Air Quality*, for a more detailed discussion of these pollutants. The nearby community of Lost Hills ranks high on the Climate and Economic Justice Screening Tool and is a sensitive receptor. See Figure 3.20-2, *Sensitive Receptors*, depicting a map of these communities near the Project site. This community has an elevated exposure to $PM_{2.5}$ and NOx (CEJST 2024). See Section 3.20.1.2, *Environmental Setting*, for wildfire impacts on pollutant release. The risk of exposure to air pollutants during a wildland fire exists under baseline conditions on the Project site. If a wildland fire should occur, $PM_{2.5}$ and NOx levels in the Project site and surrounding area could increase.

During the construction phase for the Project's solar facility and ESS, there would be a slight increase in the risk of wildfire as a result of typical construction activities that require heavy machinery. The predominant fire hazard from Project construction involves the use of vehicles and equipment, which could ignite dry vegetation, particularly during the drier, warmer conditions of summer and fall. Construction activities that could result in sparks, such as welding or grading, have a greater potential to result in an ignition. Therefore, depending on the time of year and the location of construction activities, construction activities could increase the sources of potential ignition associated with Project construction and could 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. In addition, the Applicant proposes to follow a regular maintenance protocol, and the presence and use of regularly inspected, properly maintained equipment on the Project site would have a less-than-significant impact related to the exacerbation of wildfire risks.

As described in Section 3.20.1.2, the baseline condition of the Project site is relatively flat valley grazing land. Although the flat topography does not by itself pose a risk of uncontrolled spread should a wildfire occur, the Project site is partially in a CAL FIRE-designated moderate FHSZ. This means that there is an elevated fire risk for portions of the site under baseline conditions. During construction, the site would be graded to prepare the foundation for the solar array. It is anticipated that there would be 200–250 workers, with an expected peak of 350 personnel. These personnel would be at risk of inhaling pollutants should a wildfire occur on the Project site. However, it is reasonable to assume that, as described in Section 2.9.10, *Emergency Response Plan*, in Chapter 2, *Project Description*, implementation of the emergency response plan for the Project would minimize the risk of substantial pollutant exposure to Project site occupants. That is, the threshold of exposure to pollutants would not be substantial, given this emergency response and the ability of Project site occupants to evacuate to safety should a wildfire occur. As described in Chapter 2, the Applicant would develop and implement an emergency response plan. The contents of the emergency action plan would comply with existing state regulations would be developed in consultation with the responsible fire department, FCFPD Station 93, and the ESS supplier, and would include defined roles and responsibilities and training for local first responders.

Because of the existing flat topography and the substantial distance to population centers, and with implementation of the Project-specific emergency response plan as described in Section 2.9.10, a potential ignition from Project construction is not likely to lead to the spread of wildfire that would cause significant exposure of Project occupants or nearby communities to pollutants. Therefore, impacts related to wildfire risk from Project construction would be less than significant.

Once operational, the Project would include solar arrays, an ESS, and other electrical equipment that could be susceptible to fire. However, each electrical component used on-site would be designed and operated in compliance with all applicable requirements including the 2022 California Fire Code, which has been adopted by the State of California and Fresno County, to minimize the risk of fire from stationary battery ESSs and contain fire in the event of such an incident. The California Fire Code, Chapter 12, has specific, detailed design requirements for stationary electrical ESS to ensure fire safe construction, operation, and decommissioning. The Project would be designed to comply with Chapter 12 of the California Fire Code and applicable National Fire Protection Association standards, which contain strict fire safety requirements for stationary electrical ESS. The Project would also comply with the requirements of California Public Utilities Code Section 761.3, which requires battery ESS facilities to have an emergency response and emergency action plan covering the premises of the facility that is prepared in coordination with local emergency management agencies, unified program agencies, and local first responders.

In addition, a site-specific fire risk assessment was prepared for the Project. Specifically, the fire risk assessment considered the ESS components, and determined that the battery system would be equipped with many protection systems (e.g., building management systems control, active temperature control; smoke, heat, and gas detection; electrical shutdown and disconnects; and exhaust ventilation) to effectively manage the more common fault conditions that are associated with UL 9540A[1] type failure events (single to multi-cell thermal runaway propagating failure). UL9540A large-scale testing was performed at the cell, module, and unit levels. Unit level testing was favorable, in which thermal runaway

[1] UL stands for Underwriters Laboratories, which is a global safety certification organization for battery energy storage and other electronics. 9540A refers to the thermal runaway propagation test.

was limited to the initiating module. No flying debris, external flaming, explosive discharge of gases, sparks, electrical arcs, or other electrical events were observed during testing. In addition, the deflagration (dispersed fuel combustion to avoid explosion) mitigation system was evaluated in a separate series of tests which showed the two actuated vents effectively dissipated any accumulation of vent gases in accordance with the requirements of NFPA 69 Standard on Explosion Prevention Systems. More details pertaining to the results of this assessment can be found in **Appendix N**, *Preliminary Fire Risk Assessment*.

Typical O&M activities may include oversight of solar generation, storage, and transmission facilities. In terms of Project site occupants, approximately six staff members would be present during normal business hours to operate, maintain, and monitor the site. This could peak at approximately 22 workers to account for routine maintenance events. In addition, Project's simultaneous sheep grazing operation could account for two additional personnel on-site. Should a fire occur, Project site occupants may be susceptible to pollutant exposure. However, given evacuation protocols in place such as the Project-specific emergency response plan and CAL FIRE's general capacity to respond (given that the Project site is in a partially in a Moderate FHSZ and thus has high oversight), the level of pollutant exposure would be below the threshold of significance because site occupants could evacuate the area.

During decommissioning, the risk of ignition from vehicle and equipment use would be similar to that of the construction phase. Routine maintenance and vegetation clearance during O&M would ensure that at the time of decommissioning, all required fire breaks would comply with all applicable regulatory requirements so that fuel loading would be minimal. As a result, the risk of a decommissioning-related ignition exacerbating the risk of wildfire would be less than significant.

Mitigation: None required.

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 3.20-3: 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 on the environment. (*Less-than-Significant Impact*)

The Project site is located in partly an SRA classified as moderate, with a portion in a High FHSZ. Grazing occurs on the Project site under existing conditions and would occur as part of the Project, thus reducing vegetative fuel loads. Construction of the solar facility and related ESS would include the installation and maintenance of fuel breaks, emergency water sources, power lines, and other electrical utility infrastructure that could exacerbate fire risks. The ESS enclosures would be delivered and positioned using cranes or other lifting equipment, which could increase the risk of ignition. Approximately 20.25 miles of access roads are proposed as part of the Project, which would be constructed using heavy-duty machinery. Water storage tanks would be stationed on-site to ensure that water would be available for fire safety. Power lines, including a 200-foot-long generation-tie line, would be constructed as part of the proposed solar facility. In addition, the ESS component would include a

buried electrical conduit. Diesel generators may also be used during construction. During construction, materials would be placed within the Project site near construction. Construction of all these features as described could increase the risk of fire from that of the baseline condition.

As outlined in Chapter 2, *Project Description*, once operational, the battery ESS would be equipped with several advanced containment and safety features to ensure reliability and safety. These features include thermal management solutions to prevent overheating and thermal runaway. They are also designed with fire suppression systems, incorporating clean agents or aerosol-based technologies to quickly extinguish fires. Additionally, the ESS would feature advanced battery management systems that would continuously monitor the strength and performance of each cell, providing real-time diagnostics and ensuring that cells operate within safe parameters to reduce the potential for overheating and subsequent ignition. Enclosure units would be built to be fire-resistant and would be designed to vent gases safely in case of cell failure (Chapter 2, *Project Description*). These features, combined with stringent safety protocols and regular maintenance, would contribute to a decreased risk of ignition given the nature of battery storage infrastructure.

As stated in Chapter 2, the ESS enclosures would also house the heating, ventilation, and air conditioning and fire protection systems. During Project O&M, water would be stored in tanks on-site for emergency fire suppression. In addition, active grazing around the solar panels would reduce the vegetative fuel loads. These active land uses would help to reduce the risk of fire to a less-than-significant level.

During the O&M phase, battery storage systems and other electrical equipment could be susceptible to fire. However, each battery storage system used on-site would operate in compliance with all applicable requirements: the California Fire Code; §608 of the International Fire Code, which has been adopted by the State of California and Fresno County to minimize risks of fire from stationary battery storage systems and contain fire in the event of such an incident; and Article 480 of the Electrical Code, which identifies insulation and venting requirements for stationary storage batteries to further reduce potential fire risk. Intermittent maintenance activities would increase the potential for ignition on-site because of the presence of vehicles and equipment. However, given the low frequency of maintenance activities, site topography, vegetation, and surrounding land uses, Project O&M would not substantially exacerbate existing wildfire risk. In addition, the sheep grazing operation that occurs on the Project site would assist in keeping vegetation—and thus fuel loading—at a minimum, in turn reducing fire risk.

During decommissioning, the risk of ignition from vehicle and equipment use would be similar to that of the construction phase. Routine maintenance and vegetation clearance during O&M would ensure that at the time of decommissioning, all required fire breaks would comply with all applicable regulatory requirements so that fuel loading would be minimal. Before structure demolition, transformer oil, maintenance fuels (e.g., gasoline for a lawn mower), and cooling liquid (for battery units) would be removed and disposed of properly. These flammable fuels could increase the risk of an uncontrolled spread of wildfire; however, their removal from the Project site would eliminate the inherent risk. In addition, active grazing around the solar panels would reduce the fuel load. As a result, the risk of a decommissioning-related ignition resulting in exacerbation of wildfire would be less than significant.

Mitigation: None required.

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 3.20-4: 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 instability, or drainage changes. (*Less-than-Significant Impact*)

During construction, as analyzed in Section 3.11, *Hydrology and Water Quality*, the proposed grading and addition of impervious areas could change the drainage patterns of the Project site. This could lead to erosion, siltation, issues with flooding, or pollutant runoff. However, as described previously, the land is relatively flat, so the risk of landslides is negligible. Additionally, hazardous materials used during construction, operation, maintenance, and decommissioning would be properly stored, used, and disposed of (consistent with regulatory requirements) as discussed in Section 3.10, *Hazards and Hazardous Materials*. Therefore, impacts of construction activities related to runoff or post-fire slope stability would be less than significant.

As discussed in Impact 3.20-3, the Project has the potential to slightly increase ignition risk. However, even with this slight increase in wildfire risk, the Project would not pose a substantial risk of causing post-fire slope instability. Because the Project site is located on flat land, the Project would not be located on slopes that could contribute to the occurrence of landslides or flooding. Furthermore, soil conditions would be stabilized by grazing, which would continue with the Project, once operational. Therefore, the Project would have no impact related to its potential to exacerbate the risk of flooding and mudslides as a result of post-fire slope instability.

During decommissioning, the Project would not expose people to increased risk of downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes because of flat site topography. During the removal of aboveground and belowground structures, including the concrete pads that support inverters and transformers, drainage patterns would have the potential to change. However, revegetation and earthwork to restore the site to pre-Project agricultural condition would reduce the risk of flooding. Because the Project site is flat, there would be no potential for downslope or downstream flooding or landslides; thus, no impact would occur under this criterion during decommissioning.

Mitigation: None required.

Pacific Gas and Electric Company Infrastructure

The proposed components of PG&E's infrastructure improvements, including a 230-kilovolt switching station and a 200-foot-long generation-tie line, would not impair an adopted emergency response plan or evacuation plan.

Both site and electrical work would occur during construction of the PG&E infrastructure. It is reasonable to assume that the Project would comply with the existing PG&E Company Emergency Response Plan, because this would be a PG&E operation. In addition, the Fresno County Office of Emergency Services' Operational Area Master Emergency Services Plan outlines a general structure for emergency responders

in the event of an emergency in the county, but the plan does not establish any specific evacuation routes or plans, standards, goals, or policies directly applicable to the PG&E infrastructure parts of the Project. Therefore, the PG&E infrastructure would not conflict with the implementation of this plan.

During O&M, the same would hold true. Because it would be part of a PG&E project, the proposed infrastructure would be subject to the PG&E Company Emergency Response Plan. Additionally, the Fresno County Office of Emergency Services' Operational Area Master Emergency Services Plan is relevant to the Project location, although no specific evacuation routes are identified. Thus, during O&M of the PG&E infrastructure, no emergency response or evacuation plan would be impaired. The six site access points would comply with requirements set forth by CAL FIRE or the FCFPD to ensure adequate emergency access, and thus would be maintained during all O&M.

In the final phase of the Project, decommissioning, the Project site would be returned to a condition comparable to that before construction. Because no evacuation routes are outlined in the Fresno County Multi-Hazard Mitigation Plan, the Master Emergency Services Plan, or the Fresno County General Plan, evacuation routes for the Project location and surrounding area would be identified and coordinated as needed by local law enforcement and emergency service responders during an emergency. Thus, the portion of the Project impact specifically attributable to the PG&E work would be less than significant with respect to emergency response and evacuation plans under criterion a).

During construction of the substation, excavation and grading are expected to occur. This would entail using heavy-duty vehicles to backfill, compact, and level the area. The equipment used for the installation of a copper grounding grid, as well as transformers and metal structures, could increase the risk of ignition of a fire. However, the risk of a fire spreading uncontrollably is low because of the precautions in place, such as the PG&E Company Emergency Response Plan. Likewise, should construction equipment ignite a fire on the Project site, Project occupants would be equipped to evacuate given implementation of the Project's emergency response plan, as detailed in Section 2.9.10 in Chapter 2, *Project Description*, before construction. Thus, pollutant exposure would be minimal.

During O&M, risks of ignition are inherently associated with power lines. However, PG&E's 2023 Wildfire Fire Prevention Plan would apply to the PG&E interconnection infrastructure, as required by CPUC General Order 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, ProActive Responses to Fire Incidents, enhancements to PG&E's Storm Outage Prediction Model, the Wildfire Reclosing Disable Program, and the implementation of the Public Safety Power Shutoff program (PG&E 2019). Additionally, vegetation along the PG&E line would be managed in compliance with NERC Standard FAC-003, Transmission Vegetation Management. The Project also would abide by the CPUC vegetation management and clearance requirements contained in General Order 95, and General Order 165, which would reduce the potential for exposure of surrounding communities to exacerbated risks of the uncontrolled spread of a wildfire during construction and operation.

In the final phase, PG&E infrastructure components would be decommissioned. Although the majority of the underground electrical equipment would be extracted and removed from the site, electrical conduit

and other materials installed more than 3 feet below the ground surface would be decommissioned in accordance with County requirements (see Chapter 2, *Project Description*). All roads included in the PG&E infrastructure would also be removed. Similar to the construction phase, heavy-duty machinery and equipment would be necessary for this decommissioning. The inherent ignition risk with the machinery required on-site could increase the risk of wildfire. However, it is reasonable to assume that all applicable protocols would be followed, including those in the PG&E Company Emergency Response Plan and the Project's emergency response plan, as outlined in Section 2.9.10, which together would ensure adequate evacuation capacity for personnel in the event of a fire. Thus, under criterion b), impacts related to wildland fire from the added PG&E infrastructure would be less than significant.

The primary fire hazards from construction of the PG&E switching station would involve the use of vehicles and equipment, which could ignite dry vegetation and cause a fire. In addition, construction would have emergency water sources on-site to respond to fires. The same would hold true during decommissioning. Therefore, the Project would not require the installation or maintenance of infrastructure that has not been considered in the analysis of the Project. As a result, the portion of the Project impact specifically attributable to the PG&E work would be less than significant under criterion c).

To reduce fire risk associated with the PG&E interconnection facilities including the switching station, PG&E would comply with CPUC vegetation clearance and other regulatory requirements described in the context of Impact 3.20-2. Given this regulatory compliance, the risk of PG&E infrastructure igniting a fire during O&M would be minimal. The portion of the Project impact specifically attributable to the PG&E work would be less than significant.

The PG&E infrastructure 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. Because the site is flat and no steep slopes exist in or around the PG&E infrastructure, under criterion d) there would be no impact for PG&E infrastructure components of the Project to expose people or structures to significant risks as a result of runoff or drainage changes.

3.20.4 Cumulative Analysis

The geographic scope for potential cumulative impacts related to wildfire is a radius of 10 miles from the Project site, which includes the study area and the surrounding conditions that could contribute to the fire environment and nearby evacuation routes. Within this distance, past, present, and reasonably foreseeable projects in the cumulative scenario include the Fifth Standard Solar Complex, Coalinga Oilfield Improvement Project, Key Energy Storage Project, CPUC 3610, and the Gates Dynamic Reactive Support Project. For a complete list of cumulative projects, see Table 3.1-1 in Section 3.1, *Environmental Analysis*. Ongoing impacts related to the wildfire considerations of other projects in the vicinity are reflected in the environmental setting described in Section 3.20.1.2; these specifically include the potential for the nearby solar projects and agricultural land uses to result in an ignition as a result of a mechanical failure and/or maintenance activities. Environmental conditions in the geographic scope for cumulative effects are not conducive to the rapid spread of uncontrolled wildfire, and although existing land uses could result in a source of ignition, operating solar projects and agricultural uses do not present a significant risk with respect to ignition sources.

The Project's less-than-significant incremental contribution to cumulative conditions would not cause or contribute to a significant cumulative impact related to the downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The Project site is located on flat land, not on steep slopes that could contribute to the occurrence of landslides, post-fire slope instability, or flooding. Although there are other projects in the area including solar and battery storage operations, the Project itself would not add an increased risk to these people or structures. With respect to exposing people or structures to a significant risk involving wildland fire, the Project would have no impact when considered cumulatively. (*No Impact*)

Similarly, the PG&E Improvements have a less-than-significant incremental contribution to cumulative conditions and would not cause or contribute to a significant cumulative impact related to the downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The PG&E Improvements would be constructed on flat land, not on steep slopes that could contribute to the occurrence of landslides, post-fire slope instability, or flooding. Although there are other projects in the area, including solar and battery storage operations, the PG&E Improvements would not add an increased risk to these people or structures. With respect to exposing people or structures to a significant risk involving wildland fire, the PG&E Improvements would have no impact when considered cumulatively. (*No Impact*)

Impact 3.20-5: The Project would not cumulatively impair an adopted emergency response plan or an emergency evacuation plan. (*Less-than-Significant Impact*)

This Project, when considered with others in the region, would not result in obstruction of any adopted emergency response or evacuation plan. No specific evacuation routes are outlined in the Fresno County Multi-Hazard Mitigation Plan (Fresno County 2024a), the Fresno Kings Unit Fire Plan (CAL FIRE 2024), or the Fresno County General Plan (Fresno County 2024b); thus, evacuation routes for this area would be identified and coordinated as needed by local law enforcement and emergency service responders during an emergency. It is reasonable to assume that these routes would not change based on the number of projects in this region, because local agencies would still need to outline routes in case of an emergency regardless of project occurrence.

Although there are other solar and energy transmission projects near the Project site (notably the Fifth Standard Solar Project), the incremental impact of capacity of emergency response planning would not be cumulatively considerable. The Project would allow for adequate emergency ingress and egress with access points on SR 33 and Sutter Avenue and would not interfere with the SR 33 thoroughfare. Site access points would comply with requirements set forth by CAL FIRE or the FCFPD to ensure adequate emergency access. Should an emergency occur, SR 33, which is adjacent to the Project site, would have adequate capacity to serve the 200–250 personnel who could be on-site. Considering other projects in the vicinity and the potential for overlapping construction periods, there could be an increase in evacuation traffic given an emergency. However, the 200–250 personnel who would be on the Project site at any given time would be nominal with respect to the evacuation capacity of local infrastructure, given the expansive service territory served. Thus, the Project would not impose impacts that could be cumulatively considerable with others in the region.

More specifically, CAL FIRE and local response agencies would not be overburdened by the addition of this Project to the region, given the proximity and capability of SR 33 to serve as an evacuation route

from the Project site and to provide emergency access to the Project site. In addition, there is already a requirement by Fresno-Kings Unit to act in an emergency that necessitates evacuating personnel from this area. Both the solar facility/ESS and PG&E infrastructure project components fall under the same jurisdiction for emergency response and evacuation plans. Thus, cumulative conclusions would be the same. Cumulatively, this Project's less-than-significant contribution to cumulative conditions would not cause or contribute to a significant cumulative impact due to impairment of an emergency response plan. For the same reasons, the PG&E Improvements' less-than-significant contribution to cumulative conditions would not cause or contribute to a significant cumulative impact due to impairment of an emergency response plan.

Mitigation: None required.

Impact 3.20-6: The Project would not, due to slope, prevailing winds, and other factors, cumulatively exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. (*Less than Significant*)

As discussed under Impact 3.20-2, wildfires release $PM_{2.5}$ and NOx into the air, which can negatively affect the health of people near the wildfire. See Section 3.4, *Air Quality*, for an analysis of pollutant release. Although the construction, O&M, and decommissioning of both the solar facility/ESS and the PG&E infrastructure would have a less-than-significant impact with regard to the uncontrolled spread of a wildfire and pollutant exposure, the impacts of the Project as a whole would combine with the incremental impacts of other projects in the cumulative scenario to contribute to a cumulative impact.

The community of Lost Hills is already past the threshold of acceptable level for $PM_{2.5}$ and NOx exposure. According to the Climate and Economic Justice Screening Tool, the surrounding community is in the 93rd percentile for $PM_{2.5}$ in the air, which is critical (CEJST 2024). Any wildfire in the area would contribute to an increase in exposure to this community, which is already a sensitive receptor. The Fifth Standard Solar Project, which is a solar photovoltaic facility 6 miles northeast of the Project site (Table 3.1-1), is in the same air basin as Lost Hills (CARB 2024). Should a wildfire occur at either solar generation facility, this community would be at an increased risk of substantial pollutant exposure, over the critical threshold. Other projects within 10 miles of the Project site that pose a potential risk of pollutant release should a fire occur include the Key Energy Storage Project, CPUC 3610, CUP 3294, and Gates Dynamic Reactive Support Project. These projects are in the same air basin as the sensitive receptor community of Lost Hills. Although none of these projects alone may contribute to a substantial pollutant release should a fire occur, the addition of this Project to this existing landscape of moderate fire risk facilities positioned close to a sensitive receptor community could contribute to impacts when considered cumulatively.

However, the Project's incremental contribution to cumulative impacts when considered cumulatively would remain less than significant because the Project's minor incremental increase in fire risk would be offset because the Project site and the surrounding area are not populated and are sparsely vegetated in a largely flat agricultural region with no forested areas. In addition, the other developed land uses include other energy storage and generation-related projects, all of which abide by local fire codes and regulations. The Project's incremental contribution to cumulative impacts on wildfire risk to the region as a whole would be less than significant. Thus, when considered with other land uses in the region, the addition of this Project would not contribute to a greater risk of wildfire and cumulative impacts to

wildfire risk would be less than significant. For the same reasons, the PG&E Improvements' incremental contribution to cumulative impacts on wildfire risk to the region as a whole would be less than significant.

Mitigation: None required.

Impact 3.20-7: 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 cumulatively exacerbate fire risk or result in temporary or ongoing impacts on the environment. (*Less than Significant*)

Although the Project itself would not significantly exacerbate fire risk, the need for additional roads, water sources, power sources, and other components related to these energy infrastructure improvements may present an increased risk. This topic is beyond the scope of the Project's direct effects; cumulatively, however, this may present an increased fire risk to this region. Nonetheless, the commitment and obligation to maintain buffer zones compliant with state and local regulations, as well as the upholding of emergency response plans and procedures, would ensure that the Project's incremental contribution to potential significant wildfire impacts would not be cumulatively considerable and thus would be less than significant. This applies to all components of the Project, including the solar facility/ESS and the PG&E infrastructure. The Project's incremental contribution to cumulative impacts on wildfire risk to the region as a whole would be less than significant. For the same reasons, the PG&E Improvements' incremental contribution to cumulative impacts on wildfire risk to the region as a whole would be less than significant.

Mitigation: None required.

3.20.5 References

Bennett. 2017. *Appendix B. The Effects of Topography, Weather, and Fuel on Fire Behavior*. Available: https://ir.library.oregonstate.edu/downloads/m326m2061. Accessed August 29, 2024.

CAL FIRE (California Department of Forestry and Fire Protection). 2019. *California Department of Forestry and Fire Protection Strategic Plan*. Available: https://www.paperturn-view.com/cal-fire-communications/strategicplan2019-final?pid=MjU253660. Accessed September 5, 2024.

CAL FIRE (California Department of Forestry and Fire Protection). 2023. State Responsibility Area Fire Hazard Severity Zones: Fresno County. Available: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-maps-2022. Accessed September 3, 2024.

CAL FIRE (California Department of Forestry and Fire Protection). 2024a. *California Department of Forestry and Fire Protection Strategic Plan*. Available: https://www.fire.ca.gov/about/cal-fire-strategic-plan-2024. Accessed December 2, 2024.

CAL FIRE (California Department of Forestry and Fire Protection). 2024b. *Fresno Kings Unit Fire Plan*. January 1, 2024.

Cal OES (California Office of Emergency Services). 2023. *California State Emergency Plan Coordinating Draft*. Available: https://www.caloes.ca.gov/wp-content/uploads/Preparedness/Documents/2023-SEP-Draft-Public-Review.pdf. Accessed September 9, 2024.

CARB (California Air Resources Board). 2024. Air Monitoring Sites Interactive Map. Available: https://ww3.arb.ca.gov/qaweb/mapdemo/map_module.php#:~:text=Browse%20by%20Operating%20District:%20QAS%20Site%20Search%20page. Accessed September 12, 2024.

CDC (Centers for Disease Control and Prevention). 2024. "How Wildfire Smoke Affects Your Body." April 19, 2024. Available: https://www.cdc.gov/wildfires/risk-factors/index.html#cdc_risk_factors_overview-health-effects-of-wildfire-smoke. Accessed September 5, 2024.

CEJST (Climate and Economic Justice Screening Tool). 2024. Interactive Map. Accessed September 12, 2024.

CPUC (California Public Utilities Commission). 2017a. *General Order Number 165, Public Utilities Commission of the State of California, Inspection Requirements for Electric Distribution and Transmission Facilities*. Available: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M078/K606/78606034.PDF. Accessed September 5, 2024.

CPUC (California Public Utilities Commission). 2017b. *General Order Number 166, Public Utilities Commission of the State of California, Standards for Operation, Reliability, and Safety During Emergencies and Disasters*. Available: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-policy-division/reports/general-order-no-166.pdf. Accessed September 5, 2024.

CPUC (California Public Utilities Commission). 2020. *General Order Number 95, Public Utilities Commission of the State of California, Rules for Overhead Electric Line Construction*. Available: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M338/K730/338730245.pdf. Accessed September 5, 2024.

CPUC (California Public Utilities Commission). 2021. "Fire Threat Maps and Fire-Safety Regulations. Rulemaking." Available: https://www.cpuc.ca.gov/industries-and-topics/wildfires/fire-threat-maps-and-fire-safety-rulemaking. Accessed September 16, 2024.

FCFPD (Fresno County Fire Protection District). 2023. *Annual Report*. Available: https://www.fresnocountyfire.org/fcfpd-annual-report. Accessed September 3, 2024.

FCFPD (Fresno County Fire Protection District). 2024. Fresno County Fire Battalion 14. Available: https://www.fresnocountyfire.org/fresno-county-fire-battalion-14. Accessed September 3, 2024.

Fresno COG (Fresno Council of Governments). 2024. *Priority Climate Action Plan*. March 2024. Available: https://www.fresnocog.org/wp-content/uploads/2024/07/Fresno-COG-PCAP_030124_-FINAL-reduced-size-file.pdf. Accessed September 5, 2024.

Fresno County. 2024a. *2024 Fresno County Hazard Mitigation Plan*. May 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/resources/hazard-mitigation-plan/draft-2024-fresno-county-hazard-mitigation-plan.pdf. Accessed September 3, 2024.

Fresno County. 2024b. *Fresno County General Plan Policy Document, General Plan Review*. Final. February 2024. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed September 6, 2024.

Google Earth. 2025. Search term: "Fire departments in Fresno County near Avenal." Accessed May 13, 2025.

Jaffe, D. A., and H. Lee. 2024. "Wildfire Impacts on O_3 in the Continental United States Using $PM_{2.5}$ and a Generalized Additive Model (2018–2023)." *Environmental Science and Technology* 58:14764–14774. Available: https://pubs.acs.org/doi/pdf/10.1021/acs.est.4c05870. Accessed August 29, 2024.

PG&E (Pacific Gas and Electric Company). 2016. *Transmission Vegetation Management Standard*. October 1, 2016. Available: https://www.pge.com/content/dam/pge/docs/outages-and-safety/outage-preparedness-and-support/td-7103s.pdf. Accessed September 3, 2024.

PG&E (Pacific Gas and Electric Company). 2019. *Company Emergency Response Plan (CERP)*. July 1, 2019. Available: https://www.pge.com/content/dam/pge/docs/outages-and-safety/outage-preparedness-and-support/CERP.pdf. Accessed September 6, 2024.

PG&E (Pacific Gas and Electric Company). 2024. *2025 Wildfire Mitigation Plan Update*. April 2, 2024. Available: https://energysafety.ca.gov/what-we-do/electrical-infrastructure-safety/wildfire-mitigation-and-safety/wildfire-mitigation-plans/2025-wildfire-mitigation-plans/. Accessed September 9, 2024.

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CHAPTER 4
Comparison of Project and Alternatives

4.1 Introduction to 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. It also requires that an EIR evaluate a "no project" alternative to allow decision-makers to compare the impacts of approving a project with the impacts of not approving the project (CEQA Guidelines §15126.6).

This chapter describes the factors considered in identifying and screening potential alternatives to the Project, explains why some potential alternatives were eliminated from further consideration, and describes the alternatives that were carried forward for analysis. This chapter also compares the environmental impacts of the Project to the impacts of the alternatives evaluated in detail. This comparison is based on the analysis of environmental impacts of the Project provided in Chapter 3, *Environmental Analysis*.

4.2 Alternatives Development and Screening Process

Consistent with CEQA Guidelines §15126.6, the County screened potential alternatives and thereafter determined to carry some forward for more detailed consideration based on the following factors:

1. Whether the alternative would meet most of the basic Project objectives. Section 2.4 in Chapter 2, *Project Description*, lists the 10 Project objectives identified by the Applicant. Of the 10, the County has determined the following four to be the "basic objectives" pursuant to CEQA Guidelines §15126.6(a).[1] Any alternative determined not to meet these four objectives was not carried forward for more detailed review.
    a. *Basic Objective 1:* Fulfill the Applicant's executed large generator interconnection agreement for 300 megawatts (MW) solar photovoltaic (PV).
    b. *Basic Objective 2:* Provide an energy storage system with 300 MW of alternating current battery storage capacity in an environmentally responsible manner.
    c. *Basic Objective 3:* Develop a site that is proximate to existing high-voltage transmission infrastructure to minimize environmental impacts through the following methods:
        (i) Locating generation facilities in an area that receives adequate solar radiation.

[1] The County has distilled the Applicant's 10 objectives to the above-identified four basic objectives after having determined that the remaining six goals could or would be served by the four basic objectives identified in this section. For example, the Applicant's separate goals regarding the generation of renewable energy would be served by Objectives 1 and 2 above, while the goals related to renewable energy industry–related power generation, employment, and tax revenue each would be served by any alternative other than the No Project Alterative.

(ii) Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practical.

(iii) Using land that has been fallow due to lack of water.

(iv) Minimizing water use.

(v) Reducing greenhouse gas (GHG) emissions.

d. *Basic Objective 4:* Support State of California and Fresno County goals of protecting farmland and conserving groundwater through continuing agricultural use under terms of the existing Williamson Act contracts by providing active grazing lands.

2. Whether the alternative would be potentially feasible, where *feasible* means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (Public Resources Code §21061.1; CEQA Guidelines §§15126.6, 15364).[2] Any alternative determined to be infeasible was not carried forward for more detailed review.
3. Whether the potential alternative would be able to avoid or substantially lessen any of the potentially significant impacts of the Project. See Chapter 3, *Environmental Analysis*.
4. Whether implementation of the alternative is remote or speculative. For purposes of this analysis, *remote* means unlikely or having only a slight chance of occurring, and *speculative* means unsupported, theoretical, or based on conjecture or guesswork. Any potential alternative determined to be remote or speculative was not carried forward for more detailed review.

In addition to these screening criteria, the California Public Utilities Commission invited input about potential alternatives initially considered by the Applicant as part of the site selection process, as well as input received from Tribes as part of the Assembly Bill 52 consultation process; from agencies and others during the public scoping period for the EIR; and from the CEQA team identified in Chapter 6, *Report Preparation*. See, e.g., **Appendix A**, *Scoping Report*. The input received is reflected in the discussion and analysis below.

As a result of the alternatives development and screening process, this EIR initially considered six potential alternatives: (1) Reduced Acreage Alternative, (2) Adjusted Project Site, (3) Alternative Energy Storage Technology, (4) Solar-Only/No Energy Storage, (5) Alternative Sites, and (6) the CEQA-required no project alternative. For the reasons discussed below, the County carried the following three alternatives forward for more detailed consideration: Reduced Acreage Alternative, Adjusted Project Site, and the No Project Alternative.

4.3 Alternatives Rejected from Detailed Review

A potential alternative was not carried forward for detailed consideration if it was determined to not meet most of the basic Project objectives; to be infeasible, or to be unable to avoid or substantially lessen one or more potential significant impacts of the Project; or to be either remote or speculative. A brief description and rationale for not carrying forward potential alternatives that failed the screening process is provided below.

[2] A sufficient demonstration of financial infeasibility requires more than a showing that the alternative would be more expensive or less profitable; it requires evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project. *Citizens of Goleta Valley* (1998) 197 Cal. App. 3d. 1167, 1181.

4.3.1 Alternative Energy Storage Technology

As proposed, the Project would consist of either a lithium-ion, a lithium-ion and iron-flow, or a sodium sulfur battery storage option. The County considered whether energy storage technologies that differ from the ones proposed could meet the screening criteria because (1) energy can be stored in a variety of ways and (2) the Project's proposed energy storage technology involves some risk, given the presence of hazardous materials and increased fire potential (albeit a less-than-significant potential with the implementation of protection measures).

4.3.1.1 Compressed-Air Energy Storage

In a compressed-air energy storage system, electricity is used during low-demand periods to compress air at up to 1,000 pounds per square inch and inject it for storage underground (USEPA 2024a; PG&E 2018). When energy demand is highest, the stored compressed air is used to power a generator. In Alabama, salt caverns are used to store compressed air; however, such formations are not found in Fresno County (California Division of Mines 1958). PG&E is conducting a pilot project to determine whether the underground porous rock formations more commonly found in its territory could be a suitable storage alternative for a compressed-air energy storage system. The U.S. Department of Energy issued a final environmental assessment in 2014 (DOE 2014) and commissioning of the 300-MW-capacity project was announced in 2021 (Power Technology 2021). The preparers of this Draft EIR are unaware of the existence of any compressed-air energy storage system larger than PG&E's 300 MW project in San Joaquin County, or the location of a suitable site elsewhere in California other than the King Island site near Stockton, which PG&E also explored when siting its pilot project (PG&E 2018).

Table 4-1 presents an assessment of the potential Compressed-Air Energy Storage Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

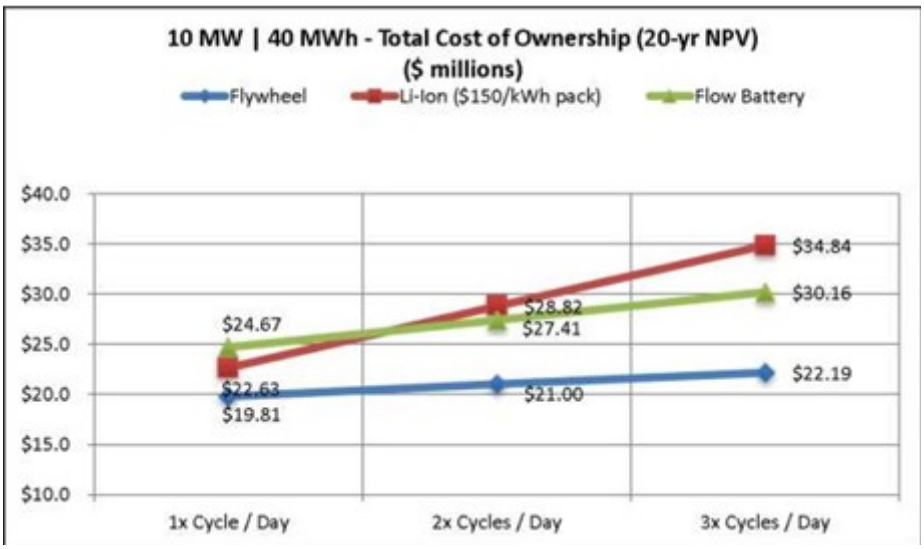
4.3.1.2 Flywheel Energy Storage

A *flywheel* is a type of rotor. In a flywheel energy storage system, electricity is used to accelerate a rotor, through which the energy is conserved as kinetic rotational energy; when the energy is needed, the spinning force of the flywheel is used to turn a generator (USEPA 2024a). The Energy Research and Development Division of the California Energy Commission (CEC) produced its *Final Project Report on Flywheel Systems for Utility Scale Energy Storage* in 2019 (CEC 2019). The final report evaluated a kinetic energy storage system based on advanced flywheel technology from Amber Kinetics to determine its commercial viability for utility-scale energy storage. After the company's commercial release of the M32 flywheel product in October 2018, the CEC's final report found the technology promising. A data sheet about the product published by its manufacturer states, "The M32 can be scaled up to tens or hundreds of megawatts for grid connected or grid forming applications" (Amber Kinetics 2024).

TABLE 4-1
SCREENING SUMMARY: POTENTIAL COMPRESSED-AIR ENERGY STORAGE ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Fail	Although the PG&E pilot project would lead one to conclude that an energy storage system with 300 megawatts of storage capacity could be constructed, and an underground storage system could presumably continue agricultural use aboveground, this potential alternative would not meet the other basic Project objectives because there are no suitable underground storage conditions near the Project site. This alternative also would not fulfill the interconnection agreement for solar energy generation and would not develop a site that is proximate to high-voltage transmission infrastructure.
Would the potential alternative be potentially feasible?	Fail	The technical feasibility of a 300-megawatt project in San Joaquin County has been established. However, it is not clear that a compressed-air storage system could be developed as an alternative to the Project successfully within a reasonable period of time, because PG&E's pilot project took nearly a decade and has not been repeated elsewhere at the demonstrated scale, and because the economic viability of such an undertaking at Project scale is untested and unproven.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Unclear	PG&E's 300-megawatt pilot project initially assumed a minimum of 40 acres of surface area for both the permanent power plant and the well field over the reservoir. As the project was refined, it became clear that the preferred approach would be to separate the wells and power plant site by up to 5 miles, with the well field remaining over the reservoir and connected by an air pipeline to an approximately 20-acre power plant site. When scaling to approximate the surface area needed to accommodate comparable capacity, the Project would require more than 460 acres. As a result of this increased area of disturbance, a potential Compressed-Air Energy Storage Alternative would not avoid or substantially lessen any of the potential significant impacts of the Project.
Would implementation of the proposed alternative be remote or speculative?	Fail	No compressed-air energy storage alternative of comparable capacity to the Project has been developed anywhere in the state. Further, the Applicant's renewable energy portfolio does not include compressed air. It would be both unreasonable and speculative to assume that the Applicant would develop this expertise within a reasonable time frame if a Compressed-Air Energy Storage Alternative were carried forward and ultimately approved.
CONCLUSION: This alternative fails to meet the screening criteria because it would not meet most of the objectives of the Project, it would not be potentially feasible, and its implementation would be remote or speculative.		

The installation and maintenance manual for the product cautions that "the site must not have any buried gas or water lines" and advises that multi-flywheel installations require appropriate depth below ground surface (at approximately 70 inches, nearly 6 feet deep), height above ground surface (12 inches), and clearance between units (36 inches) (Amber Kinetics 2018). The ground surface must be level (with a grade of no more than 1 percent), smooth enough to provide even support across the entire base of each unit, and "compressed to ensure that the soil can support a uniform load of approximately 3.5 pounds per square inch… without settling" (Amber Kinetics 2018). Information from Beacon Power, which operates three East Coast plans with flywheel technology, states that "depending on the specific site, 20 MW or more can be installed per acre" (Beacon Power 2024). The CEC's *Final Project Report on Flywheel Systems for Utility Scale Energy Storage* provided a cost comparison of the total cost of ownership between flywheel, lithium-ion, and flow battery storage options, as shown in **Figure 4-1**.



NOTES: kWh = kilowatt-hours; MW = megawatts; MWh = megawatt-hours; NPV = net present value
SOURCE: CEC 2019.

Figure 4-1
Energy Storage Total Cost of Ownership Comparison

A flywheel alternative would be developed on the Project site and would connect to the proposed substation via the proposed generation-tie (gen-tie) line. Site requirements and other aspects and assumptions about a flywheel alternative are assumed to be the same as for the Project except for the energy storage technology–specific needs noted above.

Table 4-2 presents an assessment of the potential Flywheel Energy Storage Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

4.3.1.3 Hydrogen Energy Storage

Hydrogen energy storage is a form of chemical energy storage that involves electrical power conversion into hydrogen, followed by later re-electrification. It is conceptually similar to battery energy storage, in that both can offset peak electricity demand charges by storing surplus energy generated during low-demand periods and supplying unused energy as needed. Once produced, hydrogen can be tanked like propane or turned into a powder. It can be physically stored as either a gas or a liquid. As a gas, hydrogen storage requires high-pressure tanks. Liquid hydrogen requires storage at cryogenic temperatures. As a solid, hydrogen can be stored by absorption either within a solid or on the surface of solids (Energy Link LLC 2024; Fuel Cell & Hydrogen Energy Association 2024).

Some authors report that hydrogen can be re-electrified in fuel cells with efficiencies up to 50 percent (Energy Link LLC 2024; American Clean Power 2024); other authors report that "hydrogen storage based on electrolysis and fuel cell systems is generally around 40%, meaning that approximately 40% of the energy used to produce hydrogen with electricity can be turned back into electricity. This is somewhat low as compared to 70–90% for Li-ion battery storage" (Headley and Schoenung 2022).

TABLE 4-2
SCREENING SUMMARY: POTENTIAL FLYWHEEL ENERGY STORAGE ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Fail	This potential alternative would meet the Project's basic Objectives 2 and 3. However, it would not provide solar energy generation pursuant to Objective 1, and it is unclear whether the 36-inch clearance between flywheel components would provide adequate clearance for grazing animals, thereby supporting goals of continuing existing agricultural use under Objective 4.
Would the potential alternative be potentially feasible?	Pass	Utility-scale flywheel technology is an emerging technology, the success of which has not been demonstrated at a scale sufficient to conclude that it would be capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. However, there also is insufficient evidence to support a conclusion that it would not be feasible. Accordingly, for purposes of a recent Fresno County CEQA document (Fresno County 2023), the County has determined that it would be potentially feasible.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Fail	If 20 megawatts of flywheel storage could be installed per acre, a 300-megawatt flywheel storage system would require 15 acres, which would be more than the Project's battery energy storage system acreage (12 acres). A flywheel alternative would not have the potential to avoid or substantially lessen any of the Project's significant impacts because it would require site disturbance, including both aboveground and belowground surface, on the same land that would be affected by the Project. The flywheels themselves have no risk of fire or hazardous-material spills. However, similar types of hazardous materials would be required for construction, operation, and maintenance of the energy storage facility, and a reasonably foreseeable upset and accident condition could involve the release of hazardous materials into soil or groundwater, thereby affecting people or the environment.
Would implementation of the proposed alternative be remote or speculative?	Fail	Utility-scale flywheel technology is an emerging technology that has not been developed at the scale of the Project anywhere in the state and the Applicant's renewable-energy portfolio does not demonstrate an expertise with it. It would be both unreasonable and speculative to assume that the Applicant would develop the necessary expertise within a reasonable time frame if a flywheel energy storage alternative were carried forward and ultimately approved.
CONCLUSION: This alternative fails to meet the screening criteria because it would not meet most of the basic Project objectives, would not avoid or substantially reduce significant impacts of the Project, and because its implementation would be remote or speculative.		

Hydrogen energy storage can support short-term load balancing. For example, when the sun sets and solar energy's contribution ramps down, grid operators can turn on hydrogen generators to provide power to the grid until the solar energy supply recovers in the morning. However, the real benefit of hydrogen storage seems to be for longer-term, seasonal energy storage (e.g., to provide power back to the grid during cold or cloudy winter months when heating needs and other demands create a strain) (NREL 2020; Headley and Schoenung 2022; Fuel Cell & Hydrogen Energy Association 2024). As an energy storage technology, "it's more cost-effective to store renewable power for short durations, such as two or four hours, with a battery energy storage system" (Larson 2021). This may be in part because "the power components associated with hydrogen systems are generally much more expensive than other storage options" (Headley and Schoenung 2022). For longer-term storage, though, such as weeks, months, or seasons, hydrogen storage is much more cost-effective than battery energy storage (Larson 2021). Researchers at Sandia National Laboratories agree: "Hydrogen is generally not practical for small quantities of energy storage but is cheaper than batteries for storage durations above about 12 hours, despite the lower roundtrip efficiency and cost of electrolyzers/fuel cells" (Headley and Schoenung 2022).

Commercial use of hydrogen storage is being tested. For example, Mitsubishi Power is pursuing a project in Utah called the Advanced Clean Energy Storage Project, which will use 220 MW of electrolysis to convert renewable power into green hydrogen for storage in two underground salt caverns (each the size of the Empire State Building) located beneath the power plant. The company estimates that the caverns will be capable of storing enough green hydrogen to provide 300 gigawatt-hours of clean energy and claims that more than 40,000 shipping containers of lithium-ion batteries would be needed to produce an equivalent number of gigawatt-hours (Mitsubishi Power Americas 2024). In California, SG H2 Energy is partnering with the City of Lancaster to develop a green hydrogen production facility that uses recycled mixed paper waste to produce up to 3.8 million kilograms of hydrogen per year by processing 42,000 tons of recycled waste annually (SG H2 Energy 2024). Nonetheless, industry "challenges related to upfront costs for electrolyzers and fuel cells, hydrogen distribution, roundtrip efficiency, and safety remain" (Headley and Schoenung 2022).

Table 4-3 presents an assessment of the potential Hydrogen Energy Storage Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

TABLE 4-3
SCREENING SUMMARY: POTENTIAL HYDROGEN ENERGY STORAGE ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	This potential alternative would meet most of the Project objectives.
Would the potential alternative be potentially feasible?	Fail	Hydrogen energy storage has lower efficiency and higher up-front cost than other energy storage technologies (Headley and Schoenung 2022). Accordingly, the preparers of this EIR have determined that this potential alternative would not be capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Pass	A hydrogen energy storage alternative could have a smaller footprint than the Project, thereby having the potential to avoid or substantially lessen significant impacts of the Project that are disturbance-based.
Would implementation of the proposed alternative be remote or speculative?	Fail	Utility-scale hydrogen energy storage is an emerging technology with re-electrification efficiencies between 50 and 60 percent. Further, the technology is not within the Applicant's current renewable energy portfolio, and it would be both unreasonable and speculative to assume that the Applicant would prioritize the development of the necessary expertise within a reasonable time frame if a hydrogen energy storage alternative were carried forward and ultimately approved.
CONCLUSION: This alternative fails to meet the screening criteria because it would not meet most of the Project objectives and would not be potentially feasible, and because its implementation would be remote or speculative.		

4.3.2 Solar-Only/No Energy Storage

The battery energy storage system (BESS) facility as proposed would be located in the southwestern portion of the Project site, adjacent to the proposed substation and switching station along PG&E's 230-kilovolt (kV) transmission line. As discussed in Section 3.20, *Wildfire*, the Project is located within a Moderate Fire Hazard Zone. The nearby community of Lost Hills ranks high on the Climate and

Economic Justice Screening Tool and is a sensitive receptor to wildfire-related air pollutants. The BESS facility would be approximately 0.5 mile away from residences within the unincorporated Lost Hills community.

Lithium-ion BESS facilities can be susceptible to a greater fire risk than a solar PV array component under certain conditions. Those conditions include a lack of battery protection or integrated monitoring and control systems, or insufficient insulation or design of the containment structure that results in poor temperature control and environment protection (Conzen et al. 2023).

The BESS included as a Project component would not result in a significant impact related to wildfire risk because it would be designed to meet state and local codes and other standards. However, this alternative considers the full removal of the BESS facility relative to the Project objectives to assess whether a reduction in significant environmental impacts could occur.

Table 4-4 presents an assessment of the potential Solar-Only/No Energy Storage Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

TABLE 4-4
SCREENING SUMMARY: POTENTIAL SOLAR-ONLY/NO ENERGY STORAGE ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	This potential alternative would meet the Project's basic Objectives 1, 3, and 4 because the solar facility would be retained, but it would not meet Objective 2.
Would the potential alternative be potentially feasible?	Pass	The potential alternative could be accomplished in a successful manner within a reasonable period of time.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Fail	The potential alternative could lessen some of the potentially significant impacts of the Project; for example, there would be less of a wildfire risk if there were fewer Project components. However, there would still be some wildfire risk due to the proposed solar photovoltaic and PG&E infrastructure components, during construction, operation and maintenance, and decommissioning activities. Additionally, the inclusion of the battery energy storage system facility with the other Project components would have a less-than-significant impact on wildfire risks as a whole. Therefore, the proposed alternative would not substantially reduce potential wildfire risks.
Would implementation of the proposed alternative be remote or speculative?	Pass	The proposed alternative would not be remote or speculative, as many solar-only facilities have been permitted and constructed in Fresno County.
CONCLUSION: This alternative fails to meet the screening criteria because it would not avoid or substantially reduce significant impacts of the Project.		

4.3.3 Alternative Sites

CEQA Guidelines §15126.6(f)(2)(A) states:

> *The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. …If the lead agency concludes that no feasible alternative locations exist, it… should include the reasons in*

> *the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location.*

Here, the Project's potential significant impact on special-status wildlife would be avoided or substantially lessened by putting the Project in a different location outside habitat ranges or migratory corridors, or where the entire site has been previously developed and no potential habitat exists (e.g., impaired agricultural lands, brownfield sites). Additionally, the potential significant impact of the Project related to ambient noise levels or excessive vibration levels affecting people or structures would be avoided or substantially lessened by locating the Project farther from existing residents and structures (e.g., other agricultural lands). Similarly, the Project's potential significant impact on transportation resources would be avoided or substantially lessened by locating the Project at a site with an existing sufficient circulation network (e.g., brownfield site) or farther away from existing communities (e.g., agricultural site).

The Applicant's approach to initial site evaluation and selection was to find a business-reasonable balance of the results of an environmental constraints analysis and permitting challenges. Primary selection criteria included the following:

- Minimizing the complexity of interconnection (including both logistical and safety issues) by finding sites that would avoid a need for the Project's gen-tie line to traverse an interstate or the California Aqueduct.
- Identifying landowners willing to make their property available for renewable energy generation and energy storage.
- Identifying sites that would be otherwise suitable for the proposed use based on the adequacy of roadways in the vicinity, the sites' separation from residences, and their relatively flat topography and locations outside of a 100-year floodplain and protected habitat areas.
- Identifying sites that have no or avoidable sensitive habitat, minimal presence of listed species, no cultural/historical significance, no or avoidable aquatic resources, and reasonable distance from large residential development.

Accordingly, any potential alternative site that would not meet these primary selection criteria would not be a reasonable alternative to the Project and the implementation of an alternative project on such a site would be both remote and speculative.

Changing the point of interconnection from the proposed substation would not be feasible because the California Independent System Operator and the Applicant have an interconnection agreement in place to provide energy at this location. Additionally, the Project would be located as close as feasible to the proposed substation to minimize energy losses between the substation and the generating facility, thereby facilitating energy efficiency. Therefore, alternative sites that would require a new interconnection position were not considered feasible alternatives to the Project for the purposes of CEQA. It is possible that the Project could be developed on an alternative site that already contains a viable point of interconnection, although the currently selected site would also avoid environmental constraints that could be present in at such alternative sites.

Figure 4-2, *Alternative Sites Rejected from Detailed Review*, displays the locations of the potential alternative sites discussed below in Sections 4.3.3.1 through 4.3.3.3.

4.3.3.1 Non–Williamson Act Contracted Lands

The Legislature adopted the California Land Conservation Act of 1965, better known as the Williamson Act, as a statewide strategic response to development pressures and rising property taxes (DOC 2024a). The law has three principal objectives: to protect agricultural resources, preserve open space, and promote efficient urban growth.

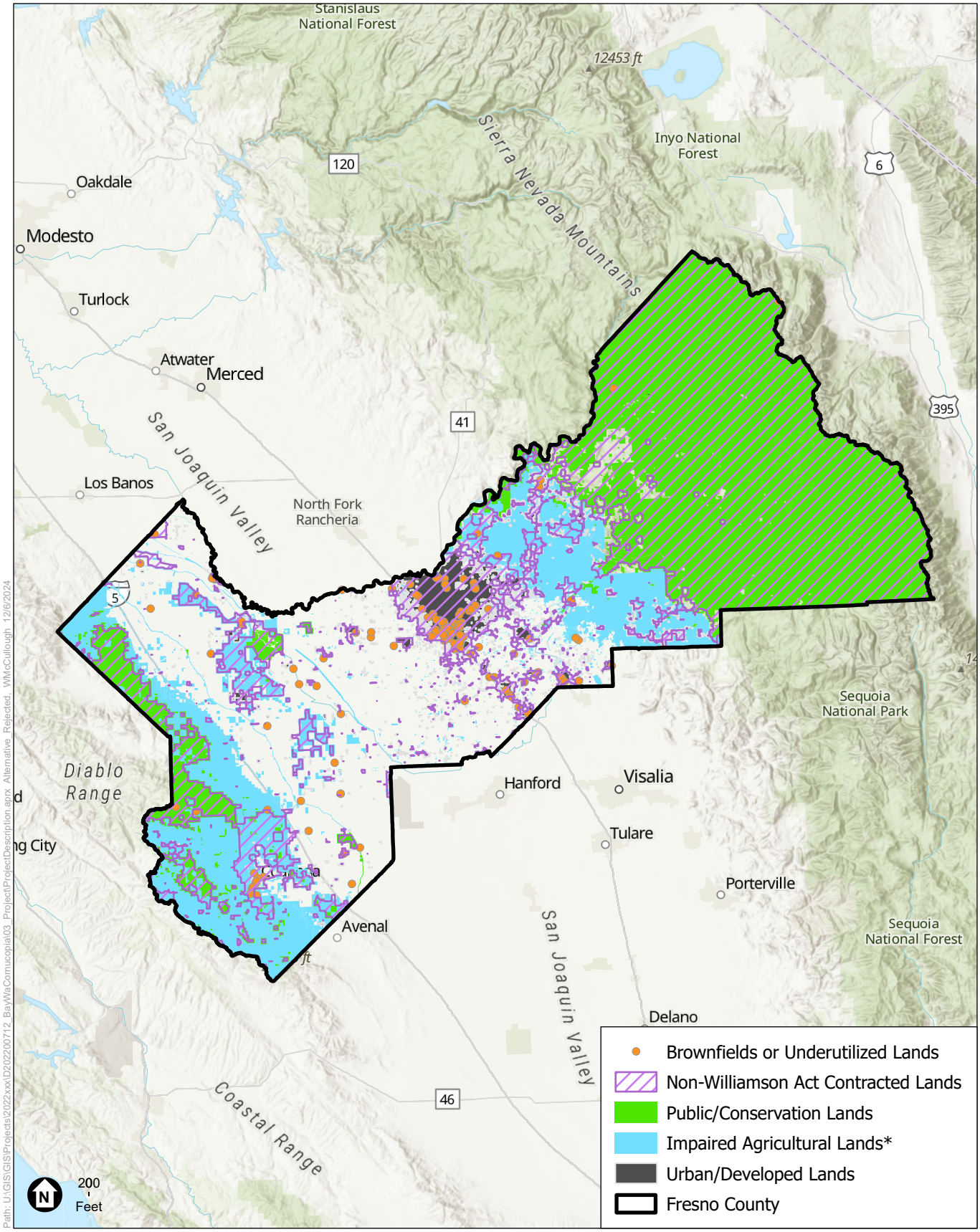
Without Williamson Act protections in place on the Project site, these objectives could be compromised in Fresno County. The entire approximately 2,446-acre Project site consists of parcels subject to Williamson Act contracts. The County initially considered whether an alternative site on lands not subject to Williamson Act contracts could meet the screening criteria. For the reasons summarized below, the County determined not to carry a "Non–Williamson Act Contracted Lands" alternative forward for detailed review in the EIR.

The California Department of Conservation's Williamson Act Enrollment Finder shows that lands in Fresno County that are not subject to Williamson Act contracts are generally in the following locations:

- Within the Sierra Nevada and other areas with hilly terrain.
- Within and surrounding incorporated cities.
- South of Mendota, along State Route (SR) 33 and within the Mendota Wildlife Area/Fresno Slough.
- Other small pockets of non-contracted land in the southeastern portion of the county, such as near Five Points, possibly non-contracted because of a lack of water or other factors.

Potential candidate sites that would be reasonable and feasible, would accomplish most of the basic objectives of the Project, and would not be speculative could include other degraded agricultural lands that are not subject to a Williamson Act contract, where the use of irrigation water is prohibited, or that otherwise have been identified as a "least conflict area" for purposes of solar development. One such site is retired farmland owned by Westlands Water District that is located adjacent to and north of the Project site, south of the city of Mendota 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).

Some of the potential candidate sites would not be flat enough for utility-scale solar development (e.g., mountainous areas) or contain other land uses potentially incompatible with solar (e.g., wildlife preserves, urban development). Non-contracted lands on flat land in other areas may not be near the existing transmission system. Lands south of Mendota are near medium-voltage transmission lines (60 kV), compared to the Project's location adjacent to PG&E's high-voltage (230 kV) transmission line, and such lands may require additional infrastructure to support the transmission of energy generated by a 300 MW solar PV facility. Finally, small pockets of non-contracted land, or individual non-contracted sites, would not be large enough to support the Project's solar PV and BESS components.



SOURCE: ESA, 2024; CDOC, 2024; USEPA, 2024; CPAD, 2024

Cornucopia Hybrid Project

* Note: Includes non-irrigated, vacant, and disturbed farmland

Figure 4-2
Alternative Sites Rejected from Detailed Review

ESA

Table 4-5 presents an assessment of the potential Non–Williamson Act Contracted Lands Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

TABLE 4-5
SCREENING SUMMARY: POTENTIAL NON–WILLIAMSON ACT CONTRACTED LANDS ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	This potential alternative would meet the Project's basic Objectives 1, 2, and 4. It also could meet Objective 3, depending on the specific location of the alternative Project site.
Would the potential alternative be potentially feasible?	Pass	The potential alternative could be accomplished in a successful manner within a reasonable period of time.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Fail	None of the potential alternative sites were carried forward for more detailed review because none of them would avoid or substantially lessen any of the potentially significant impacts of the Project. Energy generation facilities placed on hilly or mountainous terrain may affect sensitive species or habitats. The increased distances of potential alternative sites to the existing high-voltage transmission system would result in increased impacts relative to those of the Project with respect to aesthetics (additional poles and wires), collision-related impacts on avian species, wildfire risk (if the transmission lines were strung above ground), or ground disturbance–related impacts for burrowing species (if placed below ground).
Would implementation of the proposed alternative be remote or speculative?	Pass	The proposed alternative would not be remote or speculative, as solar energy and battery energy storage system facilities may be permitted in agriculturally zoned lands in Fresno County.
CONCLUSION: This alternative fails to meet the screening criteria because it would not avoid or substantially reduce significant impacts of the Project.		

4.3.3.2 Impaired Agricultural Lands

The Project site consists of disturbed agricultural land that is designated as Agriculture by 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 lies fallow. The County initially considered whether an alternative site on different impaired agricultural lands could meet the screening criteria.

The California Department of Conservation identifies areas in Fresno County that are or could be impaired farmland, including areas that are vacant or disturbed and that are not irrigated (DOC 2024b). In western Fresno County, there are vacant/disturbed lands just north of the Project site, along SR 33 (the Sierra Pacific Materials Avenal construction aggregate mining site), and also north and west of the city of Coalinga (the Coalinga Oil Field). Both of these sites are discussed further in Section 4.3.3.3, *Brownfields or Underutilized Lands*. There are many non-irrigated farmlands in western Fresno County, generally between Interstate 5 and the western county line.

For the reasons summarized below, the County determined that it would not carry an "Other Impaired Agricultural Lands" alternative forward for detailed review in the EIR. Other non-irrigated agricultural lands in western Fresno County were carried forward as potential alternative sites because none of them would avoid or substantially lessen any of the potentially significant impacts of the Project. The increased distances of potential alternative sites to other existing substations along the 230 kV transmission corridor would result in increased impacts relative to those of the Project with respect to aesthetics (additional poles

and wires), collision-related impacts on avian species, wildfire risk (if the transmission lines were strung above ground), or ground disturbance–related impacts for burrowing species (if placed below ground).

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

- The site does not receive regular, predictable rainfall and is not irrigated otherwise.
- The ultimate removal of solar project infrastructure and reclamation of the Project site in accordance with the proposed reclamation plan (Appendix B) would facilitate a possible return to non-irrigated agricultural use of the site.
- The Project area has been identified as an "environmental conservation least conflict area" by environmental conservation stakeholders such as representatives of the Center for Biological Diversity, The Nature Conservancy, Defenders of Wildlife, Sierra Club, and Audubon California (UC Berkeley School of Law 2016).
- 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. The Project site is located in an area where renewable energy development should be focused to achieve the least conflict with other resource values (Ayres et al. 2022).
- The Project is proposed to tie into PG&E's existing 230 kV transmission line through a new substation and switching station, requiring only approximately 200 feet for a new gen-tie line. The Project would avoid the costs and impacts associated with building transmission or interconnection infrastructure from a more distant site. Further, the Project would help maximize the utilization of this existing infrastructure.

Table 4-6 presents an assessment of the potential Impaired Agricultural Lands Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

4.3.3.3 Brownfields or Underutilized Lands

Other potential alternative sites could include brownfields, closed landfills, Superfund sites, Resource Conservation and Recovery Act sites, or closed mine lands. The County researched potentially contaminated and underutilized sites that were identified as appropriate for solar PV projects as part of the U.S. Environmental Protection Agency's Re-Power America's Lands Project. In addition, the County reviewed the RE-Powering Screening Dataset 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 2023, 2024b). The RE-Powering Screening Dataset provides details for more than 130,000 sites nationwide—11,707 in California—that have been pre-screened for renewable energy potential.

TABLE 4-6
SCREENING SUMMARY: POTENTIAL IMPAIRED AGRICULTURAL LANDS ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	This potential alternative would meet the Project's basic Objectives 1, 2, and 4. It also could meet Objective 3, depending on the specific location of the alternative Project site.
Would the potential alternative be potentially feasible?	Pass	The potential alternative could be accomplished in a successful manner within a reasonable period of time.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Fail	The increased distances of potential alternative sites on non-irrigated land in western Fresno County to the existing high-voltage transmission system could result in increased impacts relative to those of the Project with respect to aesthetics (additional poles and wires), collision-related impacts on avian species, wildfire risk (if the transmission lines were strung above ground), or ground disturbance–related impacts for burrowing species (if placed below ground).
Would implementation of the proposed alternative be remote or speculative?	Pass	The proposed alternative would not be remote or speculative, as solar energy and battery energy storage system facilities may be permitted in agriculturally zoned lands in Fresno County.
CONCLUSION: This alternative fails to meet the screening criteria because it would not avoid or substantially reduce significant impacts of the Project.		

This effort resulted in the identification of 220 contaminated land sites in Fresno County. Twenty-three of the sites were noted as suitable for utility-scale PV solar development, but none were large enough to support 300 MW of solar PV generation according to the Screening Dataset. The five largest sites were:

- Mount Owen Rifle Range, approximately 6 miles northeast of Clovis—1,654 acres supporting an estimated 240 MW of solar generation.
- Fresno Air Terminal/Old Hammer Field at McKinley and Clovis avenues in Fresno—1,598 acres supporting an estimated 232 MW of solar generation.
- Helm Auxiliary Field #6 in Coalinga—773 acres supporting an estimated 112 MW of solar generation.
- Coalinga Asbestos Mine within Pine Canyon in Coalinga—682 acres supporting an estimated 99 MW of solar generation.
- Eagle Army Airfield, 1100 Prince Street in Dos Palos—655 acres supporting an estimated 95 MW of solar generation.

The development of a project combining solar energy generation and battery storage on the Mount Owen Rifle Range in Clovis would meet most of the objectives of the Project, although it would not establish a PV solar power–generating facility of sufficient size and configuration to produce up to 300 MW of alternating current of electricity at the proposed Point of Interconnection in a cost-competitive manner. Additionally, the site is not primarily flat and is not underneath or adjacent to existing electric transmission lines. For these reasons, this potential alternative site was not carried forward for more detailed review based on considerations of feasibility. Pursuant to CEQA Guidelines §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 of the Mount Owen Rifle Range site.

Large sites close to the Project site that are currently being used for industrial uses (e.g., mining and oil development) were also considered under this alternative. The Sierra Pacific Materials Avenal site (45315 Lost Hills Road) is smaller than the Project site and is in active aggregate mining production (Sierra Pacific Materials 2024). The Coalinga Oil Field is much larger than the Project site (approximately 20,000 acres). It has been in active oil production since the late 18th century (Fresno County 2018).

Separately, given the Project site's suitability for solar development, the County cannot reasonably conclude that switching the Project to a different site (e.g., the Mount Owen Rifle Range in Clovis or a site closer to the Project site) would avoid or substantially reduce the Project's potential significant impacts. The Project site would likely be subject to a different solar development proposal, the development of which would likely result in impacts comparable to those discussed in Chapter 3. In other words, an off-site alternative would more likely result in an additional project than an alternative one.

Table 4-7 presents an assessment of the potential Brownfields or Underutilized Lands Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative fails to meet the screening criteria.

TABLE 4-7
SCREENING SUMMARY: BROWNFIELDS OR UNDERUTILIZED LANDS ALTERNATIVE

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	This potential alternative would meet the Project's basic Objectives 1, 2, and 4. It also could meet Objective 3, depending on the specific location of the alternative Project site.
Would the potential alternative be potentially feasible?	Fail	The potential alternative may not be achievable in a reasonable amount of time. The potential alternative sites would require remediation to remove potentially hazardous materials and existing infrastructure before the Project components could be installed. Depending on the nature of the hazardous materials, the level of existing contamination, and the remediation work required, the work effort could be extensive and lengthy, particularly for sites that are actively in use (where the industrial use has not ceased).
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Fail	None of the potential alternative sites would avoid or substantially lessen any of the potentially significant impacts of the Project. Energy generation facilities placed on hilly or mountainous terrain may affect sensitive species or habitats. The increased distances of potential alternative sites to the exiting high-voltage transmission system would result in increased impacts relative to those of the Project with respect to aesthetics (additional poles and wires), collision-related impacts on avian species, wildfire risk (if the transmission lines were strung above ground), or ground disturbance–related impacts on burrowing species (if placed below ground).
Would implementation of the proposed alternative be remote or speculative?	Fail	In addition to the length of time required for alternative site remediation, the landowner and Fresno County would need to allow for and authorize the new land use of the site.
CONCLUSION: This alternative fails to meet the screening criteria because it would not be feasible, would not avoid or substantially reduce significant impacts of the Project, and could be remote or speculative.		

4.4 Alternatives Evaluated in Detail

4.4.1 No Project Alternative

CEQA Guidelines §15126.6(e) requires consideration of a no project alternative. This analysis considers existing conditions as of the time the Notice of Preparation was published, in May 2024. It also discusses 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.

Should the No Project Alternative be 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 Figure LU-1a of the Fresno County General Plan's Countywide Land Use Diagram. Parcels within the Project site are zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AE-40 (40-acre minimum parcel size). If the Project were not approved, other uses consistent with the AE-20 and AE-40 zoning designations could be made on one or more of the parcels that compose the Project site. Pursuant to Fresno County Zoning Ordinance §806, some of the permitted uses within the AE-20 and AE-40 zones are crop production, agricultural processing and harvesting, animal uses, greenhouses, private stables, farmworker housing, and private solar energy systems. 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), and Project-related construction noise, traffic, and air emissions would not occur. Potential ground disturbance–related impacts on tribal cultural resources and wildlife habitat would not occur. Further, under a no-development scenario, the environmental benefits of maintaining the existing ground cover related to dust control or carbon sequestration, or the benefits of generating renewable energy, that would result from solar development of the site would not be realized.

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; 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.

4.4.2 Alternative 1, Adjusted Project Site Alternative

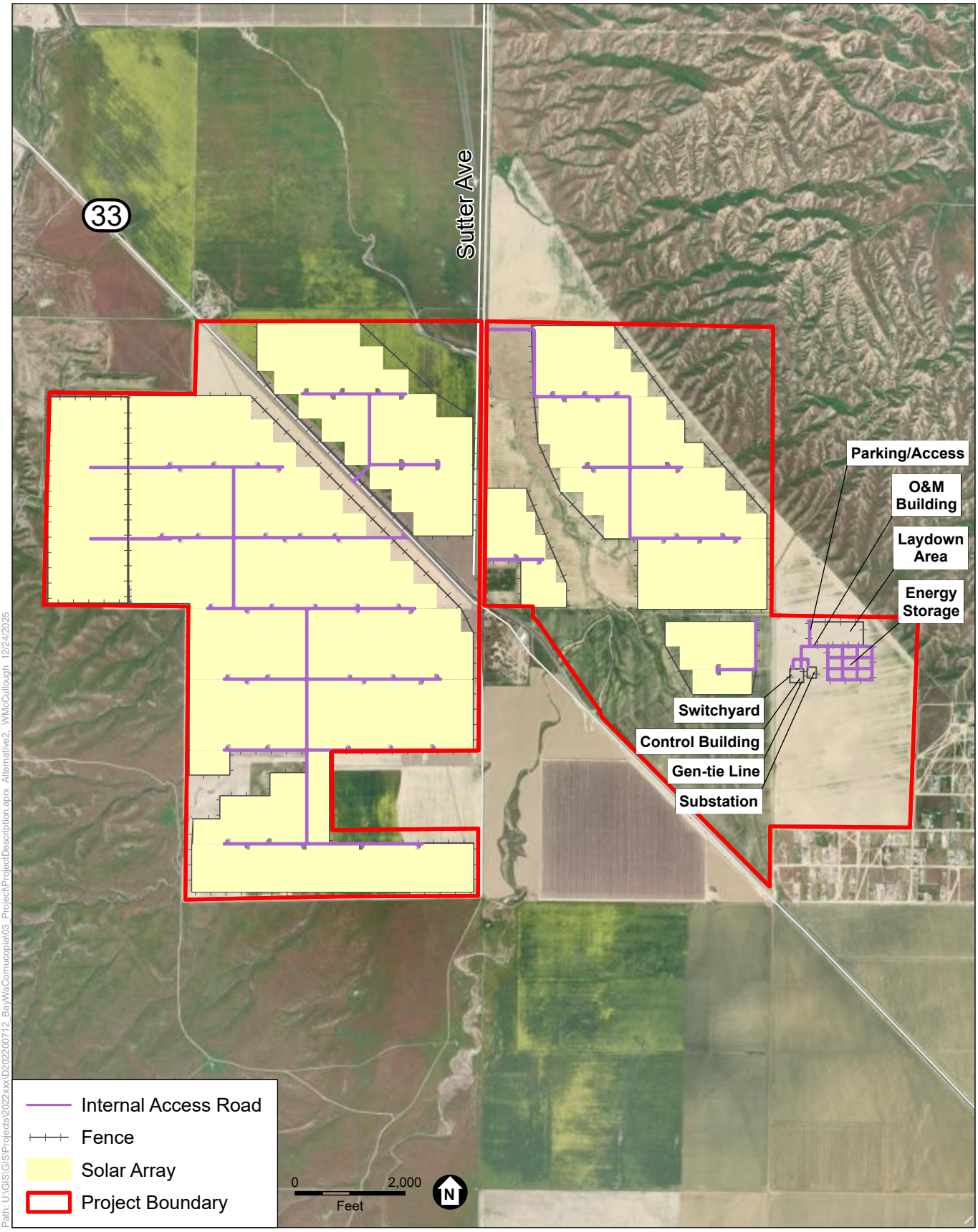
Currently, the Applicant holds lease agreements on 2,955.4 acres; however, the fenced acreage of the Project site is approximately 1,938 acres. All Project equipment would be located and installed within the boundaries of the fenced area. The Project site encompasses additional leased acreage within the northwestern portion of its boundaries (approximately 126 acres) that could be used if Project components need to be shifted to avoid or reduce potentially significant impacts on environmental resources (Adjusted Project Site). Alternative 1 considers relocating Project components, primarily solar PV arrays and internal access roads, away from sensitive noise receptors at the southeastern corner of the Project site, to

the additional leased acreage area. See **Figure 4-3**, *Alternative 1, Adjusted Project Site Alternative,* for a conceptual depiction. The Adjusted Project Site alternative could feasibly contain all infrastructure and other improvements proposed as part of the Project. However, the use of the additional acreage area may require more grading and earthwork to prepare the site for solar PV arrays, internal access roads, and other necessary Project components.

The 126-acre area is part of the "Leased Area" identified in the First Carbon 2024 cultural report and was not surveyed for the Project (Appendix G, *Cultural and Tribal Resources*). However, no cultural resources have been previously recorded and the area was surveyed in 1985 for a different project. No cultural resources were identified at that time. In addition, the archaeological sensitivity assessment by First Carbon included the "Leased Area" and was determined to have a low sensitivity for cultural resources.

The additional acreage was not surveyed and studied as part of the Cornucopia Hybrid Project Biological Resources Technical Report (Appendix F); however, the aquatic resources delineation report took a point on the boundary of this acreage and noted that a poorly defined bed and bank were visible in a drainage feature. Aerial imagery shows that the additional 126-acre area is steeper than the fenced area and appears to contain drainage features and grassland vegetation. The land is not in active agricultural use and is untilled with herbaceous vegetation, primarily non-native grasses, with some shrub/scrubland. California Natural Diversity Database information shows occurrences of special-status plant and wildlife species within the additional acreage area (see Figure 3.5-2 in Section 3.5, *Biological Resources*). The California Natural Diversity Database occurrences within the additional acreage site include the federally listed and state-listed endangered and California fully protected blunt-nosed leopard lizard (*Gambelia sila*) and California rare plant Lemmon's jewelflower (*Caulanthus californicus*). There is also a record of the federally listed endangered San Joaquin woollythreads (*Monolopia congdonii*) that borders the northeastern portion of the 126-acre area. Installing solar panels in this area would require protocol-level rare-plant surveys and surveys and avoidance measures for blunt-nosed leopard lizard. The aquatic resources delineation would also need to be extended to this area, which contains potential ephemeral drainage features.

Table 4-8 presents an assessment of the potential Adjusted Project Site Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative has been carried forward for more detailed review.



Source: ESA, 2024

Cornucopia Hybrid Project

Figure 4-3
Alternative 1
Adjusted Project Site

ESA

TABLE 4-8
SCREENING SUMMARY: ALTERNATIVE 1, ADJUSTED PROJECT SITE ALTERNATIVE

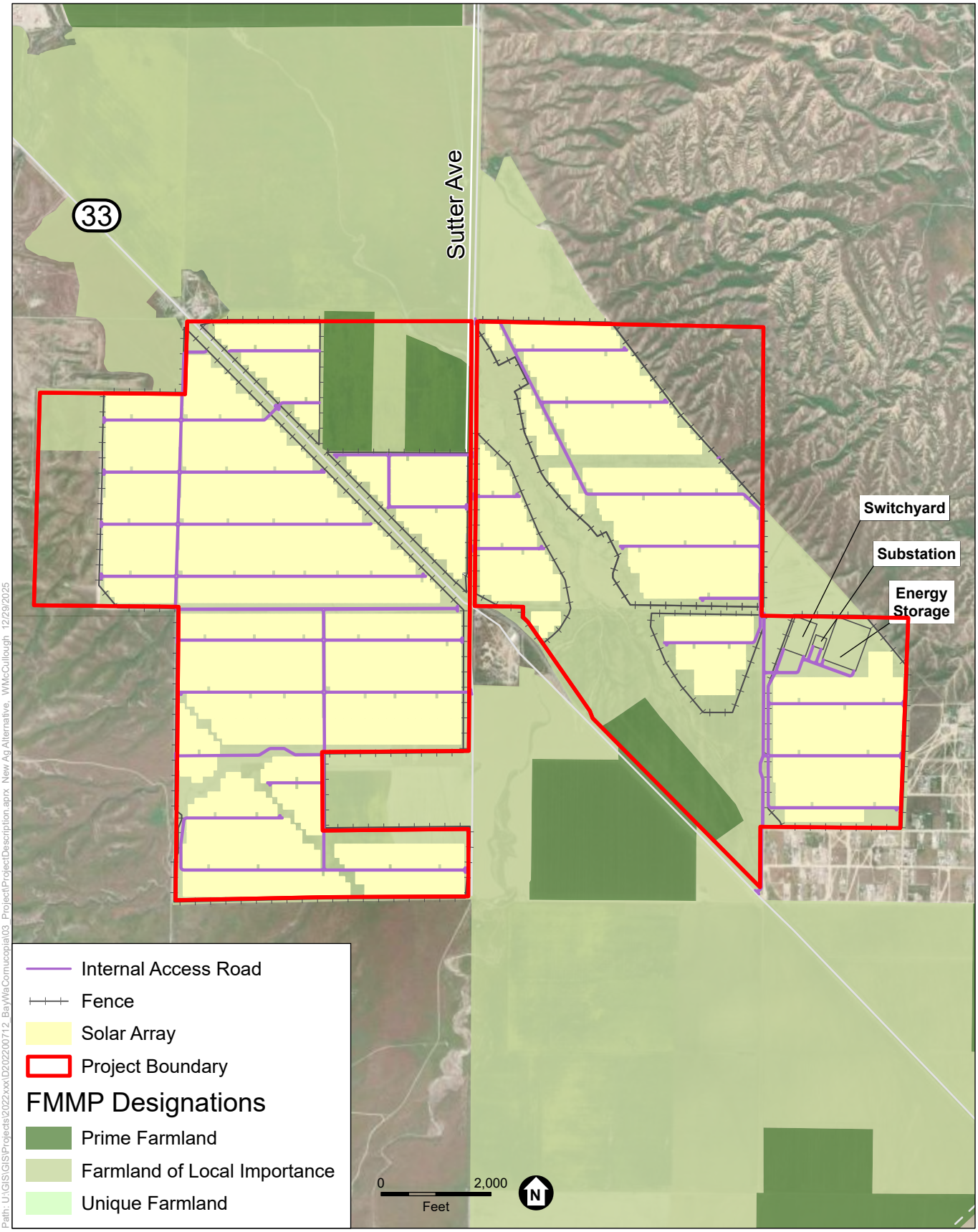
Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	Alternative 1 would meet all of the Project objectives.
Would the potential alternative be potentially feasible?	Pass	Alternative 1 would be capable of being accomplished in a successful manner within a reasonable period of time, similar to the time frame expected for the proposed Project.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Pass	Alternative 1 could reduce potential aesthetics impacts from public views of the Project site from the neighboring Lost Hills community if some or all of the solar arrays proposed for south of the battery energy storage system facility were relocated to the 126-acre alternative Project site area. Alternative 1 could also reduce potential noise impacts on sensitive receptors in the Lost Hills community.
Would implementation of the proposed alternative be remote or speculative?	Pass	No, the implementation of Alternative 1 would be neither remote nor speculative.
CONCLUSION: Alternative 1 passes all screening criteria and has been carried forward for more detailed review.		

4.4.3 Alternative 2, Avoidance of Designated Farmland Alternative

The Project would occupy approximately 2,446 acres of land designated under the Fresno County General Plan as Agriculture and zoned as Exclusive Agricultural (AE). The Project site has traditionally been used for active dry-farming of wheat and grazing fodder. Of the 2,446 acres, approximately 77.2 acres are shown on maps prepared pursuant to the California Farmland Mapping and Monitoring Program (FMMP) as Prime Farmland. The FMMP maps do not show any Unique Farmland or Farmland of Statewide Importance within the Project site (Section 3.3, Agriculture and Forestry Resources). The mapped Prime Farmland is located in the north-central and southeast portions of the Project site.

Alternative 2 proposes to avoid FMMP Farmland within the proposed Project boundary (the boundary as shown on Figure 2-3, *Site Plan*). Therefore, Alternative 2 would occupy approximately 2,368 acres of the proposed Project site parcels. See **Figure 4-4**, *Alternative 2, Avoidance of Designated Farmland,* for an overview of the Alternative 2 Project area. As under the Project, a 35-foot and 20-foot buffer (front- and side-yard setbacks, respectively) would be maintained along the external boundary of the Alternative 2 site to separate energy generation activities from the adjacent properties.[3]

[3] The Applicant submitted a Variance request, which would allow for reductions in the required front- and side-yard setbacks on property boundaries that are internal to the Project site. The Variance would also apply to the Alternative 2 site.



Source: ESA, 2024; CDOC, 2024

Cornucopia Hybrid Project

Figure 4-4
Alternative 2, Avoidance of Designated Farmland

ESA

The Alternative 2 solar PV generation facility and associated on-site support facilities would be substantially similar to the Project as proposed except as noted below. Site access would (like the Project) be provided from SR 33 and Sutter Avenue, both of which are paved public roads containing entrances on existing dirt roads that provide direct access to the site and the non-array components.

Under Alternative 2, a solar energy generating facility and battery storage project would be constructed, operated and maintained, and decommissioned on 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, except that under Alternative 2, the size and capacity of the proposed solar facility would be reduced by approximately 3 percent. All other infrastructure and improvements proposed as part of the Project would still be required under Alternative 2. Areas of Prime Farmland would remain undeveloped.

The Applicant has an obligation under the interconnection agreement to provide 300 MWac of solar energy to the transmission grid. Technological options for more advanced solar generation components could assist in resolving the shortfall in solar energy generation, but may not be available to meet the entire demand. Because a smaller project could require the use of less equipment or a shorter construction period, the potential exists for it to reduce the Project's potential significant impacts related to vehicle emissions and traffic. On the other hand, a smaller project would offset fewer GHG emissions from construction and decommissioning than the Project, such that Alternative 2's GHG emissions impacts may be greater.

Table 4-9 presents an assessment of the potential Avoidance of Designated Farmland Alternative relative to the key considerations used to screen potential alternatives and explains why this potential alternative has been carried forward for more detailed review.

TABLE 4-9
SCREENING SUMMARY: ALTERNATIVE 2, AVOIDANCE OF DESIGNATED FARMLAND

Screening Considerations	Pass/Fail	Rationale
Would the potential alternative meet most of the basic Project objectives?	Pass	Alternative 2 meets most of the Project objectives. While Alternative 2 may not meet the Project objective of fulfilling the interconnection agreement to provide 300 MWac of solar energy to the transmission grid, it would fulfill the remainder of the Project objectives.
Would the potential alternative be potentially feasible?	Pass	Alternative 2 would be capable of being accomplished in a successful manner within a reasonable period of time, similar to the time frame expected for the proposed Project.
Would the potential alternative avoid or substantially lessen any of the potential significant impacts of the Project?	Pass	Alternative 2 would avoid designated Farmland, thus there would be no impact with respect to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.
Would implementation of the proposed alternative be remote or speculative?	Pass	No, the implementation of Alternative 2 would be neither remote nor speculative.
CONCLUSION: Alternative 2 passes all screening criteria and has been carried forward for more detailed review.		

4.5 Comparison Methodology

The following methodology was used to compare alternatives in this Draft EIR:

- **Step 1: Determine the Project's environmental impacts.** Potential environmental impacts of the Project are identified and analyzed in Chapter 3 including potential direct, indirect, and cumulative impacts related to construction, operation, maintenance, and decommissioning activities.
- **Step 2: Identify alternatives.** Informed by the potential significant impacts of the Project and considering other elements of the alternatives screening and development process described in Section 5.2, the County identified Alternative 1, Alternative 2, and the No Project Alternative as those to be carried forward for more detailed environmental review.
- **Step 3: Compare impacts.** As a final step, the County conducted a comparative analysis of the environmental impacts of Alternative 1, Alternative 2, and the No Project Alternative relative to the potential environmental impacts of the Project as proposed to make a preliminary determination of the Environmentally Superior Alternative.

4.6 Comparison of Alternatives

The comparison of alternatives provided in **Table 4-10**, *Summary of Impacts of the Project and Alternatives,* 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.*

4.7 Environmentally Superior Alternative

Under CEQA, the *environmentally superior alternative* is the alternative with the least adverse impacts on the project area and its surrounding environment. For purposes of this analysis, the No Project Alternative is considered the environmentally superior alternative under CEQA because it would avoid all impacts of the Project. However, the No Project Alternative would fail to meet the Project's basic objectives. In addition, the No Project Alternative would not provide local economic and agricultural benefits such as consistent, annual sheep grazing in support of historical agricultural uses in the region; and it would not provide state and local GHG emission reduction benefits because renewable energy resources would not be developed. When the environmentally superior alternative is the No Project Alternative, CEQA requires that the EIR also identify an environmentally superior alternative from among the other alternatives.

Determining an environmentally superior alternative can be difficult because of the many factors that must be balanced. Nonetheless, at this draft stage, Alternative 2 has been determined to be preferred. Relative to the Project, it would avoid potential significant impacts to agriculture and forestry resources by avoiding designated Farmland. Alternative 2 also would reduce impacts relative to the Project in four

other resource areas: aesthetics, air quality, biological resources, and greenhouse gas emissions. Alternative 2 would not have a greater environmental impact than the Project on any resource areas analyzed in this Draft EIR.

Additional information received or developed during the agency and public review period for the Draft EIR, or during the Project approval process, could affect the balancing of the respective benefits and consequences of the alternatives. Accordingly, although a preliminary determination has been made that Alternative 2 would be the environmentally superior alternative, it would be premature to formally designate it as such at this stage. This preliminary determination as to which alternative is the environmentally superior alternative will be confirmed or corrected in the Final EIR.

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TABLE 4-10
SUMMARY OF IMPACTS OF THE PROJECT AND ALTERNATIVES

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Aesthetics			
Impact 3.2-1: LTS. The Project could substantially degrade the existing visual character or quality of public views of the site and its surroundings during construction or operation. **Impact 3.2-2:** LTS. The Project would not create a new source of light and glare that would adversely affect day or nighttime views in the area. **Impact 3.2-3:** LTS. The Project would not cause or contribute to a significant cumulative effect on aesthetics, including the existing visual character or quality of public views.	**Overall: Less than the Project** **Impact 3.2-1:** No Impact (less than the Project) because no energy generation or storage project–related development would occur on-site that could degrade the existing visual character or quality of public views of the site and its surroundings during construction or operation. **Impact 3.2-2:** No Impact (less than the Project) because no energy generation or storage project–related development would occur on-site that could degrade the existing visual character or quality of public views of the site and its surroundings. **Impact 3.2-3:** No Impact (less than the Project) because the No Project Alternative would not cause any incremental impact that could combine with the incremental impacts of past, present, or reasonably foreseeable future projects to cause or contribute to a significant cumulative effect.	**Overall: Similar to but less than the Project** **Impact 3.2-1:** LTS (similar to but less than the Project) because, although elements of the energy systems would be visible, limited public views of the energy storage project would be available from publicly accessible vantage points. The visual character of the site would be altered compared to existing conditions, but views from KOPs 2 and 3 would be less degraded than under the Project. However, a significant adverse impact related to alteration of the visual character of the site would not result. **Impact 3.2-2:** LTS (similar to but less than the Project) because Alternative 1 would create new sources of light or glare but would place potential sources of glare farther away from KOPs 2 and 3 and would not cause a significant impact on day or nighttime views in the area. **Impact 3.2-3:** LTS (similar to but less than the Project) because Alternative 1 would cause the incremental contributions noted above, but none would be cumulatively considerable for reasons similar to those described for the Project as proposed.	**Overall: Similar to but less than the Project** **Impact 3.2-1:** LTS (similar to but less than the Project) because, although elements of the energy facilities would be visible, limited public views of the energy storage project would be available from publicly accessible vantage points. The visual character of the southern two Project site parcels would be altered compared to existing conditions, and views from SR 33 and Sutter Road in particular would be degraded to a smaller degree. For reasons similar to those described for the Project, Alternative 2 would result in a substantially similar impact related to alteration of the visual character of the site. **Impact 3.2-2:** LTS (similar to but less than the Project) because Alternative 2 would create new sources of light or glare but would place potential sources of glare farther away from some public viewpoints and would not cause a significant impact on day or nighttime views in the area. **Impact 3.2-3:** LTS (similar to but less than the Project) because Alternative 2 would cause the incremental contributions noted above, but none would be cumulatively considerable for reasons similar to those described for the Project as proposed.
Agriculture and Forestry Resources			
Impact 3.3-1: LTS. The Project would convert Prime Farmland to non-agricultural use. **Impact 3.3-2:** LTS. The Project would not conflict with existing Williamson Act contracts. **Impact 3.3-3:** LTS. The Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use. **Impact 3.3-4:** LTS. The Project would not cause a cumulatively considerable contribution to a significant cumulative effect due to conversion of Farmland to non-agricultural use. **Impact 3.3-5:** LTS. The Project would not cause a cumulatively considerable contribution to a significant cumulative effect related to an existing Williamson Act contract. **Impact 3.3-6**: LTS. The Project would not result in a cumulatively considerable contribution to a significant cumulative effect involving changes in the existing environment, which could result in conversion of Farmland to non-agricultural use.	**Overall: Less than the Project** **Impact 3.3-1:** No Impact (less than the Project) because no energy generation and storage project–related development would occur on-site that could convert Prime Farmland to non-agricultural use. **Impact 3.3-2:** No Impact (less than the Project) because no contract cancellation would occur as a result of energy generation and storage project–related development on the site. **Impact 3.3-3:** No Impact (less than the Project) because no changes to the existing environment would occur that could result in Farmland conversion. **Impact 3.3-4:** No Impact (less than the Project) because the No Project Alternative would cause no incremental impacts that could contribute to cumulative impacts of Farmland conversion. **Impact 3.3-5:** No Impact (less than the Project) because no contract cancellation would occur, and thus, the No Project Alternative would cause no incremental impacts that could contribute to cumulative impacts. **Impact 3.3-6:** No Impact (less than the Project) because no changes to the existing environment would occur that could result in Farmland conversion, thus not resulting in a cumulatively considerable contribution to a significant cumulative effect.	**Overall: Same as the Project** **Impact 3.3-1:** LTSM (same as the Project) because, compared to the Project, Alternative 1 would result in the same impacts on protected farmlands given the inclusion of the northwest portion of the Project boundaries. Mitigation Measure 3.3-1 would be required to bring impacts to a less-than-significant level. **Impact 3.3-2:** LTS (same as the Project) because the development of Alternative 1 would still include active sheep grazing under the existing Williamson Act contracts; therefore, Alternative 2 could result in the same less-than-significant impact related to Williamson Act contract compatibility. **Impact 3.3-3:** LTS (same as the Project) because Alternative 1's additional acreage area would have the same impacts related to conversion of Farmland to non-agricultural use. **Impact 3.3-4:** LTSM (same as the Project) because Alternative 1's contribution to cumulative impacts related to conversion of Farmland to non-agricultural use would be the same as the Project's contribution. Mitigation Measure 3.3-1 would be required to bring impacts to a less-than-significant level. **Impact 3.3-5:** LTS (same as the Project) because Alternative 1's incremental contribution to cumulative impacts related to Williamson Act contract status would not be cumulatively considerable for the same reasons that the Project's contribution would not be cumulatively considerable. **Impact 3.3-6:** LTS (same as the Project) because Alternative 1's incremental contribution to cumulative impacts related to conversion of Farmland to non-agricultural use would not be cumulatively considerable for the same reasons that the Project's contribution would not be cumulatively considerable.	**Overall: Less than the Project** **Impact 3.3-1:** LTS (less than the Project) because Alternative 2 would have less of an anticipated permanent footprint than the Project. Therefore, although Alternative 2 would also have an LTS impact, it would convert less Prime and Unique Farmland to non-agricultural use, and no mitigation would be required. **Impact 3.3-2:** LTS (similar to but less than the Project) because Alternative 2 would result in fewer impacts on protected farmlands given the reduced footprint, but active grazing would still occur within the site, thus still resulting in a less-than-significant impact related to Williamson Act contracting. **Impact 3.3-3:** LTS (similar to but less than the Project). Alternative 2's smaller site would reduce overall impacts that could result in conversion of Farmland to non-agricultural use. **Impact 3.3-4:** LTS (less than the Project) because Alternative 2's less-than-significant contribution to cumulative impacts related to conversion of Farmland to non-agricultural use would be reduced relative to the Project, and no mitigation would be required. **Impact 3.3-5:** LTS (same as the Project) because Alternative 2's incremental contribution to cumulative impacts related to Williamson Act contract status would not be cumulatively considerable for the same reasons that the Project's contribution would not be cumulatively considerable. **Impact 3.3-6:** LTS (same as the Project) because Alternative 2's incremental contribution to cumulative impacts related to conversion of Farmland to non-agricultural use would not be cumulatively considerable for the same reasons that the Project's contribution would not be cumulatively considerable.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Air Quality			
Impact 3.4-1: LTSM. The Project could conflict with or obstruct implementation of the applicable SJVAPCD air quality plans. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) would be required. **Impact 3.4-2:** LTSM. The Project would result in a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) would be required. **Impact 3.4-3:** LTSM. The Project would expose sensitive receptors to pollutant concentrations and risk of contracting Valley Fever. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) and Mitigation Measure 3.4-2 (Minimization of Personnel and Public Exposure to Valley Fever) would be required. **Impact 3.4-4:** LTS. The Project would result in emissions (such as those leading to odors) that could adversely affect people. **Impact 3.4-5:** LTSM. The Project impact related to conflicting with or obstructing implementation of the applicable air quality plans for SJVAPCD would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) would be required. **Impact 3.4-6:** LTSM. The Project impact related to generating a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) would be required. **Impact 3.4-7:** LTSM. The Project impact related to exposing sensitive receptors to pollutant concentrations and to *Coccidioides immitis* spores would be cumulatively considerable. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) would be required. **Impact 3.4-8:** LTS. The Project impact related to emissions (such as those leading to odors) adversely affecting people would not be cumulatively considerable.	**Overall: Less than the Project** **Impact 3.4-1**: No Impact (less than the Project) because no Project-caused emissions would occur. Mitigation Measure 3.4-1 would not be required. **Impact 3.4-2**: No Impact (less than the Project) because no Project-caused emissions would occur. Mitigation Measure 3.4-1 would not be required. **Impact 3.4-3**: No Impact (less than the Project) because no Project-caused ground disturbance would occur that could generate dust that could contain the spores that lead to Valley Fever. Mitigation Measures 3.4-1 and 3.4-2 would not be required. **Impact 3.4-4**: No Impact (less than the Project) because no Project-caused emissions would be generated, including those causing odors. **Impact 3.4-5:** No Impact (less than the Project) because no energy generation and storage–related activities would occur on-site that could emit criteria pollutants that could cause or contribute to any cumulative effect due to a conflict with SJVAPCD's air quality plans. Mitigation Measure 3.4-1 would not be required. **Impact 3.4-6:** No Impact (less than the Project) because no energy generation and storage–related activities would occur on-site that could generate a net increase of criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be cumulatively considerable. Mitigation Measure 3.4-1 would not be required. **Impact 3.4-7:** No Impact (less than the Project) because no energy generation and storage–related activities would occur on-site that would expose sensitive receptors to substantial pollutant concentrations and to *Coccidioides immitis* spores and thereby cause or contribute to a significant cumulative effect. None of the mitigation measures recommended for the Project would be required. **Impact 3.4-8:** No Impact (less than the Project) because no energy generation and storage–related activities would occur on-site that would cause odors that could cause or contribute to a significant cumulative impact due to such emissions.	**Overall: Similar to but greater than the Project** **Impact 3.4-1:** LTSM (greater than the Project) because development of the additional acreage area under Alternative 1 may require more grading and earthwork to prepare the site for solar PV arrays, internal access roads, and other necessary Project components. This could generate more surface disturbance, more construction dust, and increased overall construction, operation and maintenance, and decommissioning emissions compared to the Project. Criteria pollutant emissions generated by Alternative 2 could be similar to but greater than Project emissions and could conflict with SJVAPCD's air quality plans. Mitigation Measure 3.4-1 would be required to bring impacts to a less-than-significant level. **Impact 3.4-2:** LTSM (greater than the Project) because Alternative 1 would result in increased emissions because the additional acreage area may require more grading and earthwork. However, the implementation of Mitigation Measure 3.4-1 would presumably reduce impacts to a less-than-significant level. **Impact 3.4-3:** LTS (same as the Project) because Alternative 1 could be developed within a subset of the Project boundaries, and thus would have the same potential impact as the Project on sensitive receptors and would have a less-than-significant risk of exposing sensitive receptors to substantial pollutant concentrations. **Impact 3.4-4:** LTSM (similar to but greater than the Project) because Alternative 1 could result in increased construction equipment exhaust emissions because of more grading and earthwork that the additional acreage area may require. However, the implementation of Mitigation Measure 3.4-1 would reduce impacts to a less-than-significant level. **Impact 3.4-5:** LTSM (same as the Project) because Alternative 1 would generate similar criteria pollutant emissions that would contribute to a significant cumulative effect related to a conflict with SJVAPCD's air quality plans. The implementation of Mitigation Measure 3.4-1 (Construction Worker Paved Road Travel Requirements) would be required. **Impact 3.4-6:** LTSM (same as the Project) because although Alternative 1 could generate more emissions during construction, the same emissions would be generated during operation and maintenance and would not contribute to a significant adverse cumulative impact related to violations of ambient air quality standards. To reduce the impact of construction-related emissions, the same mitigation measures as for the Project would be required. **Impact 3.4-7:** LTS (same as the Project) because Alternative 1 would result in the same exposure of sensitive receptors to substantial pollutant concentrations, and thus, the same contribution to related cumulative impacts. **Impact 3.4-8:** LTSM (similar to but greater than the Project) because Alternative 1 could result in increased emissions during construction. However, the implementation of Mitigation Measure 3.4-1 would reduce impacts to a less-than-significant level.	**Overall: Similar to but less than the Project** **Impact 3.4-1:** LTSM (same than the Project) because Alternative 2 could still conflict with SJVAPCD's air quality plans, Mitigation Measure 3.4-1 would be required and, if implemented, would reduce the significance of the impact to LTS. **Impact 3.4-2:** LTSM (less than the Project) because Alternative 2 would result in reduced emissions as a result of developing a smaller solar generation and storage facility. However, because Alternative 2 would still potentially exceed construction thresholds for $PM_{2.5}$ and PM_{10}, Mitigation Measure 3.4-1 would be required. **Impact 3.4-3:** LTSM (similar to but less than the Project) because Alternative 2 would expose sensitive receptors to reduced pollutant concentrations and risk of contracting Valley Fever. With the reduced Project footprint, exposure would be slightly less than under the Project. However, the implementation of Mitigation Measures 3.4-1 (Construction Worker Paved Road Travel Requirements) and Mitigation Measure 3.4-2 (Minimization of Personnel and Public Exposure to Valley Fever) would be required to bring impacts to a less-than-significant level. **Impact 3.4-4:** LTS (similar to but less than the Project) because Alternative 2 would reduce construction-related vehicle emissions and traffic, thereby reducing the potential for vehicles or equipment to generate odors. **Impact 3.4-5:** LTSM (similar to but less than the Project) because Alternative 2 would reduce the incremental contribution to potential cumulative effects. Mitigation Measure 3.4-1 would be required to reduce the incremental contribution of conflicting with SJVAPCD's air quality plans. **Impact 3.4-6:** LTSM (similar to but less than the Project) because Alternative 2 would reduce the incremental contribution to potential cumulative effects as a result of a smaller Project footprint. However, Mitigation Measure 3.4-1 would be required. **Impact 3.4-7:** LTS (similar to but less than the Project) because Alternative 2 would result in reduced exposure of sensitive receptors to substantial pollutant concentrations, and thus, a reduced contribution to related cumulative impacts. **Impact 3.4-8:** LTS (similar to but less than the Project) because Alternative 2 would result in fewer odors given that a smaller project could require less equipment use or a shorter construction period, and therefore would result in a reduced contribution to related cumulative impacts.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Biological Resources			
Impact 3.5-1: LTSM. Project construction and decommissioning could have a substantial adverse direct or indirect impact on special-status terrestrial species. The implementation of Mitigation Measure 3.5-1 (Exclusion Fencing) would reduce this impact to a less-than-significant level. **Impact 3.5-2:** LTS. Operation and maintenance of the Project could have a substantial adverse direct or indirect impact on special-status terrestrial species. **Impact 3.5-3:** LTS. The Project could have a substantial adverse direct or indirect impact on the following special-status species: Swainson's hawk, other raptors, and migratory birds. **Impact 3.5-4:** LTSM. Construction and decommissioning of the Project could interfere substantially with established native resident or migratory wildlife corridors. The implementation of Mitigation Measure 3.5-1 (Exclusion Fencing) would reduce this impact to a less-than-significant level. **Impact 3.5-5**: LTS. Operation and maintenance of the Project would not interfere substantially with established native resident or migratory wildlife corridors. **Impact 3.5-6:** LTSM. Construction and decommissioning could conflict with local policies or ordinances protecting biological resources. The implementation of Mitigation Measure 3.5-1 (Exclusion Fencing) would reduce this impact to a less-than-significant level. **Impact 3.5-7:** LTS. Construction could conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. **Impact 3.5-8:** LTS. The Project would not cause or contribute to a potential significant cumulative impact by having 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 CDFW and USFWS. **Impact 3.5-9:** LTS. The Project would not cause or contribute to any significant cumulative effect due to substantial interference with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. **Impact 3.5-10:** LTS. The Project would not cause or contribute to any significant impact due to a conflict with General Plan Goal OS-E, which protects wildlife resources. **Impact 3.5-11:** LTS. The Project would not cause or contribute to any significant impact due to a conflict with the provisions of the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan, an adopted habitat conservation plan.	**Overall: Less than the Project** **Impact 3.5-1**: No Impact (less than the Project) because no Project-related activities would occur that could affect special-status terrestrial species. None of the mitigation measures recommended for the Project would be required. **Impact 3.5-2**: No Impact (less than the Project) because no Project-related activities would occur that could affect special-status terrestrial species. None of the mitigation measures recommended for the Project would be required. **Impact 3.5-3**: No Impact (less than the Project) because no energy generation and storage project–related activities would occur that would have direct or indirect impacts on Swainson's hawk, other raptors, and migratory birds. **Impact 3.5-4:** No Impact (less than the Project) because no energy generation and storage project–related interference with the movement of any native resident or migratory wildlife species would occur. None of the mitigation measures recommended for the Project would be required. **Impact 3.5-5:** No Impact (less than the Project) because no energy generation and storage project–related interference with the movement of any native resident or migratory wildlife species would occur. **Impact 3.5-6:** No Impact (less than the Project) because the No Project Alternative would cause no impact that could cause or contribute to any impact related to a conflict with local policies or ordinances protecting biological resources. Mitigation Measure 3.5-1 would not be required. **Impact 3.5-7:** No Impact (less than the Project) because the No Project Alternative would cause no impact that could cause or contribute to any impact related to a conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan **Impact 3.5-8:** No Impact (less than the Project) because the No Project Alternative would cause no impact that could cause or contribute to any cumulative impact on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW and USFWS. **Impact 3.5-9:** No Impact (less than the Project) because the No Project Alternative would cause no impact that could cause or contribute to any cumulative impact related to interference with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites. **Impact 3.5-10:** No Impact (less than the Project) because the No Project Alternative would cause no impact that could cause or contribute to any cumulative impact related to a conflict with General Plan Goal OS-E. **Impact 3.5-11:** No Impact (less than the Project) because the No Project Alternative would cause no impact that could cause or contribute to any cumulative impact related to a conflict with the provisions of the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan, an adopted habitat conservation plan.	**Overall: Similar to but greater than the Project** **Impact 3.5-1:** LTSM (similar to but greater than the Project) because Alternative 1–related development would generally occupy the same fenced-area acres of the Project site, except that the additional acreage contains land with herbaceous vegetation and the potential for special-status wildlife species to occur, resulting in potential impacts on special-status terrestrial species caused by construction vehicles or ground disturbance. The implementation of Mitigation Measure 3.5-1 would be required, along with protocol-level rare plant surveys and surveys and avoidance measures for blunt-nosed leopard lizard. **Impact 3.5-2:** LTS (similar to but greater than the Project) because Alternative 1–related development would be located on the additional acreage area, which contains herbaceous vegetation and the potential for special-status wildlife species to occur, resulting in potential impacts on special-status terrestrial species caused by operation and maintenance activities. **Impact 3.5-3:** LTS (same as the Project) because Alternative 1 would not have a substantial adverse direct or indirect impact on Swainson's hawk, other raptors, and migratory birds. **Impact 3.5-4:** LTSM (same as the Project) because Alternative 1 would interfere with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors the same as the Project, given that it exists in the same fenced area boundary. The implementation of Mitigation Measure 3.5-1 would be required. **Impact 3.5-5:** LTS (same as the Project) because Alternative 1 would not interfere substantially with established native resident or migratory wildlife corridors during operation and maintenance. **Impact 3.5-6:** LTSM (same as the Project) because Alternative 1 commissioning and decommissioning activities would result in the same conflict with local policies or ordinances protecting biological resources. The implementation of Mitigation Measure 3.5-1 would be required. **Impact 3.5-7:** LTS (same as the Project) because Alternative 1 would require the same construction activities as the Project, resulting in the same level of consistency with the provisions of adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. **Impact 3.5-8:** LTS (similar to but greater than the Project) because (as discussed in the context of Impact 3.5-1) Alternative 1 would contribute a greater incremental impact on cumulative conditions because of the potential presence of special-status plant and wildlife species in the additional acreage area. **Impact 3.5-9:** LTS (similar to but greater than the Project) because Alternative 1 would contribute a greater incremental impact to cumulative conditions because of the potential presence of special-status plant and wildlife species in the additional acreage area. **Impact 3.5-10:** LTS (same as the Project) because Alternative 1 would contribute the same incremental impact to cumulative conditions regarding consistency with General Plan Goal OS-E. **Impact 3.5-11:** LTS (same as the Project) because Alternative 1 would contribute the same incremental impact to cumulative conditions, given consistency with the provisions of the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan.	**Overall: Similar to but less than the Project** **Impact 3.5-1:** LTSM (same as the Project) because Alternative 2–related development would occupy the same fenced-area acres of the Project site, resulting in the same risk to special status-status terrestrial species. The implementation of Mitigation Measure 3.5-1 would be required. **Impact 3.5-2:** LTS (similar to but less than the Project) because Alternative 2–related operation and maintenance would occupy fewer acres than Project operation and maintenance, resulting in reduced risk to special-status terrestrial species. **Impact 3.5-3:** LTS (same as the Project) because Alternative 2 would not have a substantial adverse direct or indirect impact on Swainson's hawk, other raptors, and migratory birds. **Impact 3.5-4:** LTSM (similar to but less than the Project) because Alternative 2 would restrict wildlife movement through a smaller area during construction and decommissioning. The implementation of Mitigation Measure 3.5-1 would be required. **Impact 3.5-5:** LTS (similar to but less than the Project) because Alternative 2 would further reduce the Project's potential to interfere with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors by affecting 10 percent fewer acres than the Project. **Impact 3.5-6:** LTSM (same as the Project) because Alternative 2 would result in the same conflict with local policies or ordinances protecting biological resources. The implementation of Mitigation Measure 3.5-1 would be required. **Impact 3.5-7:** LTS (same as the Project) because Alternative 2 would require the same construction activities as the Project, resulting in the same level of consistency with the provisions of adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. **Impact 3.5-8:** LTS (similar to but less than the Project) because Alternative 2 would contribute a reduced incremental impact to cumulative conditions. **Impact 3.5-9:** LTS (similar to but less than the Project) because Alternative 2 would contribute a reduced incremental impact to cumulative conditions. **Impact 3.5-10:** LTS (same as the Project) because Alternative 2 would contribute the same incremental impact to cumulative conditions regarding General Plan Goal OS-E consistency. **Impact 3.5-11:** LTS (same as the Project) because Alternative 2 would contribute the same incremental impact to cumulative conditions given consistency with the provisions of the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Cultural and Tribal Cultural Resources			
Impact 3.6-1: LTSM. The Project could cause a substantial adverse change in the significance of a newly discovered archaeological resource pursuant to §15064.5. The implementation of Mitigation Measures 3.6-1 (Cultural Resources Awareness Training), 3.6-2 (Archaeological Monitoring and Discovery Plan), 3.6-3 (Archaeological Monitoring), and 3.6-4 (Unanticipated Discovery of Cultural Resources) would reduce this impact to a less-than-significant level. **Impact 3.6-2**: LTSM. The Project could disturb human remains, including those interred outside of formal cemeteries. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce this impact to a less-than-significant level. **Impact 3.6-3:** LTSM. The Project could cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code §21074 as either a site, feature, place, or 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. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce this impact to a less-than-significant level. **Impact 3.6-4:** LTSM. The Project would contribute to a less-than-significant cumulative impact on cultural resources and tribal cultural resources. The implementation of Mitigation Measures 3.6-1 through 3.6-4 would reduce this impact to a less-than-significant level. **Impact 3.6-5:** LTS. The Project would not cause a cumulatively considerable contribution to any significant impact due to damage to previously unidentified human remains.	**Overall: Less than the Project** **Impact 3.6-1:** No Impact (less than the Project) because no energy generation and storage project–related ground-disturbance would occur that could result in a new discovery of historical or archaeological resources. None of the mitigation measures recommended for the Project would be required. **Impact 3.6-2:** No Impact (less than the Project) because this alternative would not cause or contribute to any significant impact related to damage to previously unidentified human remains. None of the mitigation measures recommended for the Project would be required. **Impact 3.6-3**: No Impact (less than the Project) because no Project-related activities would occur that could affect archaeological resources that are also tribal cultural resources. None of the mitigation measures recommended for the Project would be required. **Impact 3.6-4**: No Impact (less than the Project) because there would be no Project-specific impact that could cause or contribute to any significant effect on archaeological resources that are also tribal cultural resources. None of the mitigation measures recommended for the Project would be required. **Impact 3.6-5**: No Impact (less than the Project) because there would be no Project-specific impact that could cause or contribute to any significant effect related to the disturbance of or damage to human remains.	**Overall: Same as the Project** **Impact 3.6-1:** LTSM (same as the Project) because Alternative 1 would entail similar construction and associated ground-disturbing activities on generally the same amount of land, in generally the same location, as the Project. However, disturbance would occur that could cause a potential significant impact related to a substantial adverse change in the significance of a newly discovered historical or archaeological resource. Therefore, the implementation of the same mitigation measures (i.e., Mitigation Measures 3.6-1 through 3.6-4) would be required to reduce the potential significant impact to a less-than-significant level. **Impact 3.6-2:** LTSM (same as the Project) because this alternative could cause or contribute to any significant impact related to damage to previously unidentified human remains due to ground-disturbing activities within the Alternative 1 footprint. However, the implementation of the same mitigation measures (i.e., Mitigation Measures 3.6-1 through 3.6-4) would be required to reduce the potential significant impact to a less-than-significant level. **Impact 3.6-3:** LTSM (same as the Project) because Alternative 1 could cause or contribute to any significant impact related to tribal cultural resources beyond those of the Project. However, the implementation of the same mitigation measures (i.e., Mitigation Measures 3.6-1 through 3.6-4) would be required to reduce the potential significant impact to a less-than-significant level. **Impact 3.6-4**: LTS (same as the Project) because Alternative 1 would have a similar footprint of disturbance, and thus, the incremental contribution to potential cumulative effects on previously unknown cultural resources that are also tribal cultural resources would be the same as the incremental contribution of the Project. **Impact 3.6-5**: LTS (same as the Project) because Alternative 1 would not cause or contribute cumulatively to any significant impact related to damage to previously unidentified human remains.	**Overall: Same as the Project** **Impact 3.6-1:** LTSM (same as the Project) because Alternative 2 would entail similar construction and associated ground-disturbing activities on generally the same amount of land, in generally the same location, as the Project. However, disturbance would occur that could cause a potential significant impact related to a substantial adverse change in the significance of a newly discovered historical or archaeological resource. Therefore, the implementation of the same mitigation measures (i.e., Mitigation Measures 3.6-1 through 3.6-4) would be required to reduce the potential significant impact to a less-than-significant level. **Impact 3.6-2**: LTSM (same as the Project) because this alternative could cause or contribute to any significant impact related to damage to previously unidentified human remains due to ground-disturbing activities within the Alternative 2 footprint. However, the implementation of the same mitigation measures (i.e., Mitigation Measures 3.6-1 through 3.6-4) would be required to reduce the potential significant impact to a less-than-significant level. **Impact 3.6-3**: LTSM (same as the Project) because Alternative 2 could cause or contribute to any significant impact related to tribal cultural resources beyond those of the Project. However, the implementation of the same mitigation measures (i.e., Mitigation Measures 3.6-1 through 3.6-4) would be required to reduce the potential significant impact to a less-than-significant level. **Impact 3.6-4**: LTS (same as the Project) because Alternative 2 would have a similar footprint of disturbance, and thus, the incremental contribution to potential cumulative effects on previously unknown cultural resources that are also tribal cultural resources would be the same as the incremental contribution of the Project. **Impact 3.6-5**: LTS (same as the Project) because Alternative 2 would not cause or contribute cumulatively to any significant impact related to damage to previously unidentified human remains.
Energy			
Impact 3.7-1: LTS. Project construction, operation and maintenance, and decommissioning and site reclamation would result in the consumption or use of energy.	**Overall: Less than the Project** **Impact 3.7-1:** No Impact (less than the Project) because no energy use over baseline demands would be required.	**Overall: Same as the Project** **Impact 3.7-1:** LTS (same as the Project) because the development of Alternative 1 would occur within the same overall footprint as the Project, with the same energy generation, storage, and transmission components, thus requiring similar energy demands.	**Overall: Same as the Project** **Impact 3.7-1:** LTS (same as the Project) because the development of Alternative 2 would occur within the same overall footprint as the Project, with the same energy generation, storage, and transmission components, thus requiring similar energy demands.
Geology, Soils, and Paleontological Resources			
Impact 3.8-1: LTS. The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic groundshaking, liquefaction, or landslides. **Impact 3.8-2:** LTS. The Project would not result in substantial soil erosion or loss of topsoil. **Impact 3.8-3:** LTS. 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. **Impact 3.8-4:** LTS. The Project would not 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. **Impact 3.8-5:** LTSM. The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The implementation of Mitigation Measure 3.8-1 (Unanticipated Fossil Discovery) would reduce this impact to a less-than-significant level.	**Overall: Less than the Project** **Impact 3.8-1:** No Impact (less than the Project) because no energy generation and storage project–related ground disturbance or development would occur that could result in a substantial adverse impact involving seismic-related groundshaking, liquefaction, or landslides. **Impact 3.8-2:** No Impact (less than the Project) because no energy generation and storage project–related ground disturbance or development would occur that could result in substantial soil erosion or loss of topsoil. **Impact 3.8-3:** No Impact (less than the Project) because no energy generation and storage project–related ground-disturbance or development would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the development. **Impact 3.8-4:** No Impact (less than the Project) because no septic tanks or alternative wastewater disposal system would be developed. **Impact 3.8-5:** No Impact (less than the Project) because no energy storage project–related ground disturbance or development would occur that could destroy a unique paleontological resource or site. Mitigation Measure 3.8-1 would not be required.	**Overall: Similar to but greater than the Project** **Impact 3.8-1:** LTS (same as the Project) because development of Alternative 1 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-2:** LTS (similar to but greater than the Project) because the adjusted acreage area (126 acres) is generally less flat and would require more grading than the Project area, potentially leading to additional erosion or loss of topsoil during construction or decommissioning. **Impact 3.8-3:** LTS (same as the Project) because development of Alternative 1 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-4:** LTS (same as the Project) because development of Alternative 1 would occur within the fenced area of the Project site and, like the Project, would include septic tanks or an alternative wastewater disposal system.	**Overall: Same as the Project** **Impact 3.8-1:** LTS (same as the Project) because development of Alternative 2 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-2:** LTS (similar to but less than the Project) because only a subset of the same land that comprises the Project site would be disturbed by Alternative 2. **Impact 3.8-3:** LTS (same as the Project) because development of Alternative 2 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-4:** LTS (same as the Project) because development of Alternative 2 would occur on a subset of the Project site and, like the Project, would include septic tanks or an alternative wastewater disposal system.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Impact 3.8-6: LTS. The Project would not cause or contribute to a significant cumulative effect related to strong seismic ground shaking, liquefaction, or landslides. **Impact 3.8-7:** LTS. The Project would not cause or contribute to a significant cumulative effect related to erosion or the loss of topsoil. **Impact 3.8-8:** LTS. The Project would not cause or contribute to a significant cumulative effect related to being 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 3.8-9:** LTSM. The Project would not cause or contribute to a significant cumulative effect to paleontological resources. The implementation of Mitigation Measure 3.8-1 (Unanticipated Fossil Discovery) would reduce this impact to a less-than-significant level.	**Impact 3.8-6**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact that could cause or contribute to a significant cumulative effect related to strong seismic ground shaking, liquefaction, or landslides. **Impact 3.8-7**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact that could cause or contribute to a significant cumulative effect related to erosion or the loss of topsoil. **Impact 3.8-8**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact that could cause or contribute to a significant cumulative effect related to landslide, lateral spreading, subsidence, liquefaction, or collapse. **Impact 3.8-9**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact that could cause or contribute to a significant cumulative effect on paleontological resources. Mitigation Measure 3.8-1 would not be required.	**Impact 3.8-5:** LTSM (same as the Project) because Alternative 1 would be located in the same area as the Project, with the same potential to contain paleontological resources, and would generally disturb the same or a similar number of acres. However, the implementation of Mitigation Measure 3.8-1 would reduce impacts to a less-than-significant level. **Impact 3.8-6:** LTS (same as the Project) because development of Alternative 1 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-7:** LTS (similar to but greater than the Project) because development of Alternative 1 would contribute a slightly increased incremental impact related to erosion or the loss of topsoil, given the topography of the 126-acre area. **Impact 3.8-8:** LTS (same as the Project) because development of Alternative 1 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-9:** LTSM (same as the Project) because Alternative 1 would be located in the same area as the Project, with the same potential to contain paleontological resources, and would generally disturb the same or a similar number of acres, causing an incremental impact that could cause or contribute to a significant cumulative effect. However, the implementation of Mitigation Measure 3.8-1 would reduce impacts to a less-than-significant level.	**Impact 3.8-5:** LTSM (similar to but less than the Project) because Alternative 2 would be located on fewer acres where deposits with a high potential to contain paleontological resources could be disturbed. The implementation of Mitigation Measure 3.8-1 would be required. **Impact 3.8-6:** LTS (same as the Project) because development of Alternative 2 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-7:** LTS (similar to but less than the Project) because development of Alternative 2 would contribute a slightly reduced incremental impact related to erosion or the loss of topsoil. **Impact 3.8-8:** LTS (same as the Project) because development of Alternative 2 would occur on a subset of the same land that comprises the Project site, and thus would be subject to the same geological and seismic conditions. **Impact 3.8-9:** LTSM (similar to but less than the Project) because Alternative 2 would be located on slightly fewer acres where deposits with a high potential to contain paleontological resources could be disturbed. The implementation of Mitigation Measure 3.8-1 would be required.
Greenhouse Gas Emissions			
Impact 3.9-1: LTS. The Project would generate GHG emissions, directly and indirectly, that could have a significant impact on the environment. **Impact 3.9-2:** LTSM. Construction, operation, and decommissioning of the Project would be consistent with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The implementation of Mitigation Measure 3.3-1, Compensation for Conversion of Prime Farmland, would reduce this impact to a less-than-significant level.	**Overall: Less than the Project** **Impact 3.9-1:** No Impact (less than the Project) because no GHGs would be emitted over baseline conditions in this scenario. **Impact 3.9-2:** No Impact (less than the Project) because no GHGs would be emitted over baseline conditions in the No Project scenario, and thus the No Project Alternative could not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions.	**Overall: Same as the Project** **Impact 3.9-1:** LTS (same as the Project) because the Alternative 1 site would be adjusted from that of the Project, but the same operations would occur within the same leased area, and thus, impacts would be the same. **Impact 3.9-2:** LTSM (same as the Project) because Alternative 1 would not cause a significant impact related to a conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions upon implementation of Mitigation Measure 3.3-1.	**Overall: Similar to but less than the Project** **Impact 3.9-1:** LTS (similar to but less than the Project) because the reduced project area would require fewer equipment-use hours and vehicle trips overall, and could be developed in a shorter time frame, resulting in reduced GHG emissions relative to the Project. **Impact 3.9-2:** LTS (less than the Project) because Alternative 2 would not cause a significant impact related to a conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions.
Hazards and Hazardous Materials			
Impact 3.10-1: LTS. Implementation of the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. **Impact 3.10-2:** LTS. Implementation of the Project would not create a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. **Impact 3.10-3:** LTS. The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing sensitive receptor. **Impact 3.10-4**: LTSM. Implementation of the Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The implementation of Mitigation Measure 3.10-1 (Construction Traffic Management Plan) would reduce this impact to a less-than-significant level. **Impact 3.10-5:** LTS. Implementation of the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.10-6:** LTS. Implementation of the Project would not create a cumulative and significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	**Overall: Less than the Project** **Impact 3.10-1:** No Impact (less than the Project) because no routine transport, use, or disposal of hazardous materials above baseline conditions would occur. **Impact 3.10-2:** No Impact (less than the Project) because no energy storage–related accidental spills or releases of hazardous materials into the environment could occur. **Impact 3.10-3:** No Impact (less than the Project) because no energy generation and storage project–related activities would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. **Impact 3.10-4**: No Impact (less than the Project) because no Project-related impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would occur. Mitigation Measure 3.10-1 would not be required. **Impact 3.10-5:** No Impact (less than the Project) because no energy storage–related activities would expose people or structures to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.10-6:** No Impact (less than the Project) because no energy generation and storage–related routine transport, use, or disposal of hazardous materials would occur, and thus there could be no cumulative impacts.	**Overall: Same as the Project** **Impact 3.10-1:** LTS (same as the Project) because, although routine transport, use, or disposal of hazardous materials would occur under Alternative 1, it would not create a significant hazard to the public or the environment. **Impact 3.10-2:** LTS (same as the Project) because the impacts of Alternative 1 would be contained within the same fenced area as for the Project. **Impact 3.10-3:** LTS (same as the Project) because Alternative 1 would not involve the handling of hazardous materials within one-quarter mile of an existing sensitive receptor. **Impact 3.10-4:** LTSM (same as the Project) because Alternative 1 could impair implementation of or cause physical interference with an adopted emergency response plan or emergency evacuation plan. Mitigation Measure 3.10-1 would be required. **Impact 3.10-5:** LTS (same as the Project) because, like the Project, Alternative 1 would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **Impact 3.10-6:** LTS (same as the Project) because Alternative 1 would not create a cumulative and significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	**Overall: Same as the Project** **Impact 3.10-1:** LTS (same as the Project) because although routine transport, use, or disposal of hazardous materials would occur, it would not create a significant hazard to the public or the environment. **Impact 3.10-2:** LTS (similar to but less than the Project) because Alternative 2 would require the transport, use, or disposal of reduced amounts of hazardous materials to build and operate a smaller facility, and would reduce the geographic area by 10 percent where potential upsets or accidents involving releases into the environment could occur. **Impact 3.10-3:** LTS (same as the Project) because Alternative 2 would not involve the handling of hazardous materials within one-quarter mile of an existing sensitive receptor. **Impact 3.10-4:** LTSM (same as the Project) because Alternative 2 could impair implementation of or cause physical interference with an adopted emergency response plan or emergency evacuation plan. Mitigation Measure 3.10-1 would be required. **Impact 3.10-5:** LTS (same as the Project) because, like the Project, Alternative 2 would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Impact 3.10-7: LTS. Implementation of the Project would not create a cumulative and significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. **Impact 3.10-8**: LTS. The Project would not contribute to cumulative hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing sensitive receptor. **Impact 3.10-9**: LTSM. The Project would not cause or contribute to a significant cumulative hazard due to physical interference with emergency response or emergency evacuation. The implementation of Mitigation Measure 3.10-1 (Construction Traffic Management Plan) would reduce this impact to a less-than-significant level. **Impact 3.10-10:** LTS. Implementation of the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	**Impact 3.10-7:** No Impact (less than the Project) because no cumulative energy generation and storage–related accidental spills or releases of hazardous materials into the environment could occur. **Impact 3.10-8:** No Impact (less than the Project) because no energy generation and storage project–related activities would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste, and thus, there would be no cumulatively considerable impacts. **Impact 3.10-9:** No Impact (less than the Project) because there would be no Project-specific impact that could cause or contribute to any significant effect related to the implementation of an adopted emergency response plan or emergency evacuation plan. Mitigation Measure 3.10-1 would not be required. **Impact 3.10-5:** No Impact (less than the Project) because no energy storage–related activities would expose people or structures to a significant risk of loss, injury, or death involving wildland fires.	**Impact 3.10-7:** LTS (same as the Project) because Alternative 1 would not create a cumulative and significant hazard to the public. **Impact 3.10-8:** LTS (same as the Project) because Alternative 1 would not contribute to cumulative hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing sensitive receptor. **Impact 3.10-9:** LTSM (same as the Project) because Alternative 1 could also interfere with emergency response and evacuation. However, with the implementation of Mitigation Measure 3.10-1, the incremental contribution of Alternative 1 to cumulative effects would be the same as the Project's. **Impact 3.10-10:** LTS (similar to but less than the Project) because implementation of Alternative 1 would remove the solar arrays closest to the nearest residential community but would not expose people or structures to a significant risk involving wildland fires.	**Impact 3.10-6:** LTS (same as the Project) because Alternative 2 would not create a cumulative and significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. **Impact 3.10-7:** LTS (same as the Project) because Alternative 2 would not create a cumulative and significant hazard to the public. **Impact 3.10-8:** LTS (same as the Project) because Alternative 2 would not contribute to cumulative hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing sensitive receptor. **Impact 3.10-9:** LTSM (same as the Project) because Alternative 2 could also interfere with emergency response and evacuation. However, with the implementation of Mitigation Measure 3.10-1, the incremental contribution of Alternative 2 to cumulative effects would be the same as the Project's. **Impact 3.10-10:** LTS (similar to but less than the Project) because implementation of Alternative 2 would remove the solar arrays closest to the nearest residential community but would not expose people or structures to a significant risk involving wildland fires.
Hydrology and Water Quality			
Impact 3.11-1: LTS. The Project could violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. **Impact 3.11-2:** LTS. The Project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. **Impact 3.11-3:** LTS. 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 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 off-site; (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 3.11-4:** LTS. The Project could risk the release of pollutants due to being located in a flood hazard, tsunami, or seiche zone. **Impact 3.11-5:** LTS. The Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. **Impact 3.11-6:** LTS. The Project could result in a cumulatively considerable contribution to cumulative effects related to violation of water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality. **Impact 3.11-7:** LTS. The Project could cause a cumulatively considerable contribution to decreased groundwater supplies or substantial interference with groundwater recharge such that the sustainable groundwater management of the basin could be impeded. **Impact 3.11-8:** LTS. The Project could cause a cumulatively considerable contribution to a significant impact due to substantial alteration of 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 off-site; (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.	**Overall: Less than the Project** **Impact 3.11-1:** No Impact (less than the Project) because no energy generation and storage project–related mobilization of contamination, sediment, or other pollutants would occur that could violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. **Impact 3.11-2:** No Impact (less than the Project) because there would be no change to the existing (baseline) level of demand on groundwater supplies. **Impact 3.11-3:** No Impact (less than the Project) because no energy generation or storage–related alteration of the existing drainage pattern of the site or area would occur. **Impact 3.11-4:** No Impact (less than the Project) because no energy generation and storage–related activities would release pollutants. **Impact 3.11-5:** No Impact (less than the Project) because there would be no change to on-site conditions that could conflict with or obstruct the implementation of the water quality control plan or sustainable groundwater management plan. **Impact 3.11-6:** No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact to cumulative conditions related to water quality standards, waste discharge requirements, or other elements of surface or groundwater quality. **Impact 3.11-7**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact to cumulative conditions related to groundwater supplies or groundwater recharge. **Impact 3.11-8**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact to cumulative conditions related to alteration of the existing drainage pattern of the site or area. **Impact 3.11-9**: No Impact (less than the Project) because the No Project Alternative would not contribute any incremental impact to cumulative conditions related to pollutant release due to Project inundation, as there would be no pollutant release. **Impact 3.11-10:** No Impact (less than the Project) because no energy storage–related change to on-site conditions would occur that could conflict with or obstruct implementation of the water quality control plan or sustainable groundwater management plan.	**Overall: Same as the Project** **Impact 3.11-1:** LTS (same as the Project) because Alternative 1 would have the same overall total area of disturbance (in acres). **Impact 3.11-2:** LTS (same as the Project) because the site's size and operations would yield the same anticipated less-than-significant impact with respect to groundwater supplies. **Impact 3.11-3:** LTS (same as the Project) because Alternative 1 would not substantially alter the existing drainage pattern of the site or area in a way that would result in substantial erosion or siltation on- or off-site, result in a substantial increase in the rate or amount of surface runoff, create or contribute to runoff water that would exceed the stormwater drainage system capacity or provide substantial additional sources of polluted runoff, or impede or redirect flood flows. **Impact 3.11-4:** LTS (same as the Project) because Alternative 1 would not contribute to a significant risk release of pollutants due to being located in a flood hazard, tsunami, or seiche zone. **Impact 3.11-5:** LTS (same as the Project) because Alternative 1 would require a similar water supply for construction and operation and maintenance to what would be required under the Project. **Impact 3.11-6**: LTS (same as the Project) because Alternative 1 would contribute the same incremental contribution to cumulative conditions related to violation of water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality. **Impact 3.11-7**: LTS (same as the Project) because Alternative 1 would not result in an incrementally significant contribution to cumulative conditions related to groundwater. **Impact 3.11-8**: LTS (same as the Project) because Alternative 1 would make the same contribution to cumulative conditions related to the existing drainage pattern of the site or area. **Impact 3.11-9**: LTS (same as the Project) because Alternative 1 would make the same contribution to cumulative conditions related to the risk of release of pollutants due to Project inundation. **Impact 3.11-10**: LTS (same as the Project) because Alternative 1 would not cause a cumulatively considerable contribution that could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	**Overall: Same as the Project** **Impact 3.11-1:** LTS (same as the Project) because although Alternative 2 would have a smaller overall footprint (or area of disturbance), the Alternative 2 site would be subject to the same measures and requirements to ensure that no degradation of water quality would occur. **Impact 3.11-2:** LTS (same as the Project) because although Alternative 2 would have a smaller overall footprint (or area of disturbance), the Alternative 2 site would not substantially decrease groundwater supplies or interfere with recharge. **Impact 3.11-3:** LTS (same as the Project) because Alternative 2 would not substantially alter the existing drainage pattern of the site or area in a way that would result in substantial erosion or siltation on- or off-site, result in a substantial increase in the rate or amount of surface runoff, create or contribute to runoff water that would exceed the stormwater drainage system capacity or provide substantial additional sources of polluted runoff, or impede or redirect flood flows. **Impact 3.11-4:** LTS (same as the Project) because Alternative 2 would not contribute to a significant risk release of pollutants due to being located in a flood hazard, tsunami, or seiche zone. **Impact 3.11-5:** LTS (similar to but less than the Project) because Alternative 2's reduced area of disturbance would not use water from the existing water supply in addition to what is required under the Project. **Impact 3.11-6**: LTS (same as the Project) because Alternative 2 would not result in a reduced incremental contribution to cumulative conditions related to violation of water quality standards or waste discharge requirements or other substantial degradation of surface or groundwater quality. **Impact 3.11-7**: LTS (same as the Project) because Alternative 2 would result in an incrementally reduced contribution to cumulative conditions related to groundwater compared to the Project. The contribution would remain less than cumulatively considerable. **Impact 3.11-8**: LTS (same as the Project) because Alternative 2 would make the same contribution to cumulative conditions related to the existing drainage pattern of the site or area. **Impact 3.11-9**: LTS (similar to but less than the Project) because Alternative 2 would make a similar contribution to cumulative conditions related to the risk of release of pollutants due to Project inundation.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Impact 3.11-9: LTS. The Project could cause a cumulatively considerable contribution to a significant impact related to the risk of release of pollutants due to project inundation. **Impact 3.11-10:** LTS. The Project could cause a cumulatively considerable contribution that could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.			**Impact 3.11-10**: LTS (same as the Project) because Alternative 2 would not cause a cumulatively considerable contribution that could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan beyond that of the Project.
Land Use and Planning			
No Impacts.	No Impacts.	No Impacts.	No Impacts.
Mineral Resources			
No Impacts.	No Impacts.	No Impacts.	No Impacts.
Noise and Acoustics			
Impact 3.14-1: LTSM. 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. The implementation of Mitigation Measure 3.14-1 (Nighttime Noise Reduction for Construction Activities) would reduce this impact to a less-than-significant level. **Impact 3.14-2:** LTSM. The Project would not expose people and/or structures to excessive vibration levels. The implementation of Mitigation Measure 3.14-1 (Nighttime Noise Reduction for Construction Activities) would reduce this impact to a less-than-significant level. **Impact 3.14-3:** LTS. The Project would not cause a cumulatively considerable contribution to any significant noise or vibration impact.	**Overall: Less than the Project** **Impact 3.14-1**: No Impact (less than the Project) because no Project-caused change in ambient noise levels would occur. Mitigation Measure 3.14-1 would not be required. **Impact 3.14-2**: No Impact (less than the Project) because no Project-caused vibration would be generated. Mitigation Measure 3.14-1 would not be required. **Impact 3.14-3**: No Impact (less than the Project) because there would be no Project-specific impact that could cause or contribute to any significant effect related to noise or vibration.	**Overall: Similar to but less than the Project** **Impact 3.14-1**: LTSM (less than the Project) because the solar array closest to sensitive receptors in the Lost Hills community would be removed from the Alternative 1 site plan. As a result, the nearest project components would be approximately 0.5 mile from the nearest residences in the community (R1, R2, and R3), instead of approximately 200 feet away. Mitigation would still be required to reduce potential nighttime noise impacts on the sensitive receptor north of the project site (R4) to a less-than-significant level. **Impact 3.14-2:** LTS (**Similar to but less** than the Project) because, although Alternative 1 could cause some vibration, it would not expose people or structures to excessive vibration levels, and potential sources of vibration near sensitive receptors R1, R2, and R3 would be located further away. **Impact 3.14-3:** LTS (**Similar to but less** than the Project) because Alternative 1 would result in a reduced incremental contribution to cumulative noise or vibration conditions compared to the Project.	**Overall: Same as the Project** **Impact 3.14-1:** LTSM (same as the Project) because the project components and activities near sensitive receptors would be the same. Mitigation would still be required to reduce potential nighttime noise impacts on the sensitive receptor north of the project site (R4) to a less-than-significant level. **Impact 3.14-2:** LTS (same as the Project) because, although Alternative 2 could cause some vibration, it would not expose people or structures to excessive vibration levels. **Impact 3.14-3:** LTS (same as the Project) because Alternative 2 would not cause a cumulatively considerable contribution to noise or vibration conditions.
Population and Housing			
Impact 3.15-1: LTS. The Project could directly or indirectly induce unplanned population growth in the area. **Impact 3.15-2:** LTS. The Project would not cause a cumulatively considerable contribution to a significant cumulative effect due to the inducement of unplanned population growth in the area.	**Overall: Less than the Project** **Impact 3.15-1**: No Impact (less than the Project) because none of the proposed facilities would be constructed, operated, maintained, or decommissioned on the Project site. No construction workers would be required at the site. Thus, there would be no unplanned population growth in the study area. **Impact 3.15-2**: No Impact (less than the Project) because there would be no energy generation and storage project–related activities that could cause a cumulatively considerable contribution to unplanned population growth in the area.	**Overall: Same as the Project** **Impact 3.15-1:** LTS (same as the Project) because Alternative 1 has a construction time frame and footprint similar to that of the Project. Alternative 1 would not cause an increase, either directly or indirectly, in unplanned population growth in the area compared to that of the Project. **Impact 3.15-2:** LTS (same as the Project) because Alternative 1 contains the same operations as the Project, just shifted within the fenced area. Thus, Alternative 1 would not contribute to a significant cumulative effect due to the inducement of unplanned population growth in the area.	**Overall: Same as the Project** **Impact 3.15-1:** LTS (same as the Project) because the reduced acreage of Alternative 2 would not cause an increase, either directly or indirectly, in unplanned population growth in the area compared to that of the Project. **Impact 3.15-2:** LTS (same as the Project) because when cumulatively considered, the reduced footprint and construction time for Alternative 2 would not contribute to a significant cumulative effect due to the inducement of unplanned population growth in the area.
Public Services			
No Impacts.	No Impacts.	No Impacts.	No Impacts.
Recreation			
No Impacts.	No Impacts.	No Impacts.	No Impacts.
Transportation			
Impact 3.18-1: LTSM. Construction of the Project could conflict with a program, plan, ordinance, or policy addressing the circulation (roadway) system. The implementation of Mitigation Measure 3.10-1 (Construction Traffic Management Plan) would reduce this impact to a less-than-significant level. **Impact 3.18-2:** LTS. The Project would not conflict or be inconsistent with CEQA Guidelines §15064.3(b).	**Overall: Less than the Project** **Impact 3.18-1:** No Impact (less than the Project) because no energy generation and storage–related traffic would be generated that could cause a conflict with a program, plan, ordinance, or policy addressing the roadway system. Mitigation Measure 3.10-1 would not be required. **Impact 3.18-2:** No Impact (less than the Project) because no construction-related, operational, or decommissioning-related traffic would be generated that could conflict or be inconsistent with CEQA Guidelines §15064.3(b).	**Overall: Same as the Project** **Impact 3.18-1:** LTSM (same as the Project) because although Alternative 1 would generate approximately the same amount of traffic as the Project due to its similar size, a potentially significant impact could result from the short-term and intermittent construction-related congestion caused by construction vehicles/equipment on local roadways. The implementation of Mitigation Measure 3.10-1 would be required.	**Overall: Same as the Project** **Impact 3.18-1:** LTSM (similar but less than the Project).because although Alternative 2 would reduce the scale of the project by approximately 10 percent, resulting in a reduced project footprint and a shorter construction duration, a potentially significant impact could result from the short-term and intermittent construction-related congestion caused by construction vehicles/equipment on local

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Impact 3.18-3: LTS. 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). **Impact 3.18-4:** LTS. The Project would result in inadequate emergency access. **Impact 3.18-5:** LTSM. Implementation of the Project would not result in a cumulative and significant conflict with a program, plan, ordinance, or policy addressing the circulation system, including roadway facilities. The implementation of Mitigation Measure 3.10-1 (Construction Traffic Management Plan) would reduce this impact to a less-than-significant level. **Impact 3.18-6:** LTS. Implementation of the Project would not result in a cumulative and significant conflict with CEQA Guidelines §15064.3(b). **Impact 3.18-7:** LTS. Implementation of the Project would not result in a cumulative and significant increase in hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). **Impact 3.18-8:** LTS. Implementation of the Project in combination with cumulative development would not result in a cumulative and significant lack of adequate emergency access.	**Impact 3.18-3:** No Impact (less than the Project) because no energy generation and storage–related traffic would be generated that could increase hazards due to a geometric design feature or incompatible uses. **Impact 3.18-4:** No Impact (less than the Project) because no energy generation and storage–related traffic would be generated that could result in inadequate emergency access. **Impact 3.18-5:** No Impact (less than the Project) because no energy generation and storage–related traffic would be generated that could cause or contribute to any significant cumulative impact related to transportation. Mitigation Measure 3.18-1 would not be required. **Impact 3.18-6:** No Impact (less than the Project) because no energy storage–related traffic would be generated that could conflict or be inconsistent with CEQA Guidelines §15064.3(b). **Impact 3.18-7:** No Impact (less than the Project) because no energy generation and storage–related traffic would be generated that could cumulatively increase hazards due to a geometric design feature or incompatible uses. **Impact 3.18-8:** No Impact (less than the Project) because no energy generation and storage–related activities would occur that could cumulatively result in inadequate emergency access. **Impact 3.18-7:** LTS (same as the Project) because Alternative 1 would not result in a cumulative and significant increase in hazards due to a geometric design feature or incompatible uses. **Impact 3.18-8:** LTS (same as the Project) because Alternative 1 in combination with cumulative development would not result in a cumulative and significant lack of adequate emergency access.	**Impact 3.18-2:** LTS (same as the Project) because Alternative 1 would generate vehicle trips but would not conflict or be inconsistent with CEQA Guidelines §15064.3(b). **Impact 3.18-3:** LTS (same as the Project) because Alternative 1 would not cause a significant impact related to a substantial increase in hazards due to a geometric design feature or incompatible uses. **Impact 3.18-4:** LTS (same as the Project) because Alternative 1 would not result in inadequate emergency access. **Impact 3.18-5:** LTSM (same as the Project) because even though Alternative 1 could contribute more vehicle trips to the cumulative condition, the implementation of Mitigation Measure 3.10-1 would still be required to reduce the incremental contribution to a less than cumulatively considerable level. **Impact 3.18-6:** LTS (same as the Project) because Alternative 1 would not result in a cumulative and significant conflict with CEQA Guidelines §15064.3(b). **Impact 3.18-7:** LTS (same as the Project) because Alternative 1 would not result in a cumulative and significant increase in hazards due to a geometric design feature or incompatible uses. **Impact 3.18-8:** LTS (same as the Project) because Alternative 1 in combination with cumulative development would not result in a cumulative and significant lack of adequate emergency access.	roadways. The implementation of Mitigation Measure 3.10-1 would be required. **Impact 3.18-2:** LTS (same as the Project) because Alternative 2 would generate vehicle trips but would not conflict or be inconsistent with CEQA Guidelines §15064.3(b). **Impact 3.18-3:** LTS (same as the Project) because Alternative 2 would not cause a significant impact related to a substantial increase in hazards due to a geometric design feature or incompatible uses. **Impact 3.18-4:** LTS (same as the Project) because Alternative 2 would not result in inadequate emergency access. **Impact 3.18-5:** LTSM (similar to but less than the Project) because even though Alternative 2 would contribute fewer vehicle trips to the cumulative condition than the Project, the implementation of Mitigation Measure 3.10-1 would still be required to reduce the incremental contribution to a less than cumulatively considerable level. **Impact 3.18-6:** LTS (same as the Project) because Alternative 2 would not result in a cumulative and significant conflict with CEQA Guidelines §15064.3(b).
Utilities and Service Systems			
Impact 3.19-1: LTS. The Project would result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities that would cause significant environmental effects. **Impact 3.19-2:** LTSM. The Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. The implementation of Mitigation Measure 3.19-1 (Determine Future Water Supply Availability) would reduce this impact to a less-than-significant level. **Impact 3.19-3:** LTS. 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. **Impact 3.19-4:** LTS. The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. **Impact 3.19-5:** LTS. The Project would not cause a cumulatively considerable contribution due to relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. **Impact 3.19-6:** LTSM. The Project would not cause a cumulatively considerable contribution related to sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. The implementation of Mitigation Measure 3.19-1 (Determine Future Water Supply Availability) would reduce this impact to a less-than-significant level. **Impact 3.19-7:** LTS. The Project would not cause a cumulatively considerable contribution due to a determination by the wastewater treatment provider that 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.	**Overall: Less than the Project** **Impact 3.19-1:** No Impact (less than the Project) because no energy generation and storage–related water, wastewater treatment, stormwater drainage, electric power, or telecommunications utilities or services that could require construction that would cause significant environmental effects would be needed. **Impact 3.19-2:** No Impact (less than the Project) because no water-demanding activities would occur on the site. Mitigation Measure 3.19-1 would not be required. **Impact 3.19-3:** No Impact (less than the Project) because no wastewater that would require treatment would be generated on-site. **Impact 3.19-4:** No Impact (less than the Project) because no solid waste that would require disposal would be generated on-site. **Impact 3.19-5:** No Impact (less than the Project) because no energy generation and storage–related water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities that could cause or contribute to significant cumulative impacts would be relocated or constructed. **Impact 3.19-6:** No Impact (less than the Project) because no water demand that could contribute to significant cumulative impacts would occur. **Impact 3.19-7:** No Impact (less than the Project) because no utility or service system demand that could cause or contribute to significant cumulative impacts would be generated on-site. **Impact 3.19-8:** No Impact (less than the Project) because no waste generation that could contribute to significant cumulative impacts would occur. **Impact 3.19-9:** No Impact (less than the Project) because no solid waste that could cause or contribute to significant cumulative impacts would be generated on-site.	**Overall: Same as the Project** **Impact 3.19-1:** LTS (same as the Project) because Alternative 1 would have the same overall demand for utility and service system services and, like the Project, would not result in the construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, or telecommunications facilities that would cause significant environmental effects. **Impact 3.19-2:** LTSM (same as the Project) because Alternative 1 would have water demands similar to those of the Project. Mitigation Measure 3.19-1 would be required to ensure that sufficient water supplies would be available for the latter part of the permit term. **Impact 3.19-3:** LTS (same as the Project) because Alternative 1 would generate an amount of solid waste comparable to that of the Project, and thus (like the Project) would not generate waste in an amount that would exceed state or local standards or the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. **Impact 3.19-4:** LTS (same as the Project) because Alternative 1 would also comply with federal, state, and local management and reduction statutes and regulations related to solid waste. **Impact 3.19-5:** LTS (same as the Project) because Alternative 1 would generate a similar amount of wastewater and, like the Project, would not result in a determination by the wastewater treatment provider that it has inadequate capacity to provide service when cumulatively considered with other potential projects in the vicinity. **Impact 3.19-6:** LTSM (same as the Project) because water demands under Alternative 1 would be similar to those under the Project, and when cumulatively considered, the contribution related to sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years could be significant. Mitigation Measure 3.19-1 would be required to ensure that sufficient water supplies would be available for the latter part of the permit term, which would reduce cumulative impacts to a less-than-significant level.	**Overall: Same as the Project** **Impact 3.19-1:** LTS (same as the Project) because Alternative 2 would have the same overall demand for utility and service system services and, like the Project, would not result in the construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, or telecommunications facilities that would cause significant environmental effects. **Impact 3.19-2:** LTSM (same as the Project) because Alternative 2 would have water demands similar to those of the Project. Mitigation Measure 3.19-1 would be required to ensure that sufficient water supplies would be available for the latter part of the permit term. **Impact 3.19-3:** LTS (same as the Project) because Alternative 2 would generate an amount of solid waste comparable to that of the Project, and thus (like the Project) would not generate waste in an amount that would exceed state or local standards or the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. **Impact 3.19-4:** LTS (same as the Project) because Alternative 2 would also comply with federal, state, and local management and reduction statutes and regulations related to solid waste. **Impact 3.19-5:** LTS (same as the Project) because the reduction in wastewater generated under Alternative 2 would not result in a determination by the wastewater treatment provider that it has inadequate capacity to provide service when cumulatively considered with other potential projects in the vicinity. **Impact 3.19-6:** LTSM (same as the Project) because water demands under Alternative 1 would be similar to those under the Project, and when cumulatively considered, the contribution related to sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years could be significant. Mitigation Measure 3.19-1 would be required to ensure that sufficient water supplies would be available for the latter part of the permit term, which would reduce cumulative impacts to a less-than-significant level.

Impacts of the Project*	Impacts of the No Project Alternative Compared to the Project	Impacts of Alternative 1 Compared to the Project*	Impacts of Alternative 2 Compared to the Project*
Impact 3.19-8: LTS. The Project would not cause a cumulatively considerable contribution to the generation of 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 3.19-9:** LTS. The Project would not cause a cumulatively considerable contribution related to compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.		**Impact 3.19-7:** LTS (same as the Project) because a similar amount of wastewater would be generated under Alternative 1, which (like the Project) would not result in a determination by the wastewater treatment provider that it has inadequate capacity to provide service in addition to the provider's existing commitments. **Impact 3.19-8:** LTS (same as the Project) because Alternative 1 would not cause a cumulatively considerable contribution to the generation of 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 3.19-9:** LTS (same as the Project) because Alternative 1 would not cause a cumulatively considerable contribution related to compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.	**Impact 3.19-7:** LTS (same as the Project) because the reduction in wastewater generated under Alternative 2 would not result in a determination by the wastewater treatment provider that it has inadequate capacity to provide service in addition to the provider's existing commitments. **Impact 3.19-8:** LTS (same as the Project) because Alternative 2 would not cause a cumulatively considerable contribution to the generation of 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 3.19-9:** LTS (same as the Project) because Alternative 2 would not cause a cumulatively considerable contribution related to compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.
Wildfire			
Impact 3.20-1: LTS. The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. **Impact 3.20-2:** LTS. The Project would not, 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 3.20-3:** LTS. 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 on the environment. **Impact 3.20-4:** LTS. 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 instability, or drainage changes. **Impact 3.20-5:** LTS. The Project would not cumulatively impair an adopted emergency response plan or an emergency evacuation plan. **Impact 3.20-6:** LTS. The Project would not, due to slope, prevailing winds, and other factors, cumulatively exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. **Impact 3.20-7:** LTS. 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 cumulatively exacerbate fire risk or result in temporary or ongoing impacts on the environment.	**Overall: Less than the Project** **Impact 3.20-1:** No Impact (less than the Project) because no energy generation and storage–related development would occur on-site that could create hazards for firefighters and emergency responders and thus impair an adopted emergency response plan or emergency evacuation plan. **Impact 3.20-2:** No Impact (less than the Project) because no energy generation and storage–related use of vehicles and equipment would occur on-site that could ignite dry vegetation and result in a fire. **Impact 3.20-3:** No Impact (less than the Project) because no energy generation and storage–related installation and/or maintenance of fuel breaks, power lines, and other electrical utilities would occur on-site that could exacerbate fire risk. **Impact 3.20-4:** No Impact (less than the Project) because no energy generation and storage–related development would occur on-site that could expose people or structures to wildfire. **Impact 3.20-5:** No Impact (less than the Project) because no energy generation and storage–related development would occur on-site that could incrementally contribute to potential significant cumulative impacts on an emergency response plan or an emergency evacuation plan. **Impact 3.20-6:** No Impact (less than the Project) because no energy generation and storage–related development would occur on-site that could incrementally contribute to potential significant cumulative wildfire effects. **Impact 3.20-7:** No Impact (less than the Project) because no Project-related development would occur on-site that could incrementally contribute to potential significant cumulative wildfire effects.	**Overall: Same as the Project** **Impact 3.20-1:** LTS (same as the Project) because shifting solar PV array components to the northwestern portion of the project site would not substantially impair an adopted emergency response plan or emergency evacuation plan. **Impact 3.20-2:** LTS (same as the Project) because Alternative 1 would be developed on a subset of the leased area site and, as a result, would be subject to the same slope, prevailing winds, and other factors as the Project. A less-than-significant impact would result regarding the exacerbation of wildfire risks and related exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. **Impact 3.20-3:** LTS (same as the Project) because Alternative 1 also would require the installation or maintenance of infrastructure such as roads, fuel breaks, emergency water sources, power lines, or other utilities that could exacerbate fire risk or result in temporary or ongoing impacts on the environment. **Impact 3.20-4:** LTS (same as the Project) because Alternative 1 would be developed within the existing leased area, and thus would be subject to the same site conditions that could affect the risk of exposure of people or structures to significant site condition–related risks. **Impact 3.20-5:** LTS (same as the Project) because, for the reasons summarized above and in the context of the Project, Alternative 1 would not cumulatively impair an adopted emergency response plan or an emergency evacuation plan. **Impact 3.20-6:** LTS (same as the Project) because Alternative 1 would be subject to the same site conditions that could affect the risk of exposure of people or structures to significant site condition–related risks. **Impact 3.20-7:** LTS (same as the Project) because Alternative 1 would not make a cumulatively considerable contribution to any potentially significant cumulative wildfire impact, including the maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities).	**Overall: Same as the Project** **Impact 3.20-1:** LTS (same as the Project) because although Alternative 2 would have a smaller development footprint than the Project, its potential impact related to a potential for substantial impairment of an adopted emergency response plan or emergency evacuation plan would be the same. **Impact 3.20-2:** LTS (same as the Project) because Alternative 2 would be developed on a subset of the Project site and, as a result, would be subject to the same slope, prevailing winds, and other factors as the Project. A less-than-significant impact would result regarding the exacerbation of wildfire risks and related exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. **Impact 3.20-3:** LTS (same as the Project) because Alternative 2 also would require the installation or maintenance of infrastructure such as roads, fuel breaks, emergency water sources, power lines, or other utilities that could exacerbate fire risk or result in temporary or ongoing impacts on the environment. **Impact 3.20-4:** LTS (same as the Project) because Alternative 2 would be developed on a subset of the Project site, and thus would be subject to the same site conditions that could affect the risk of exposure of people or structures to significant site condition–related risks. **Impact 3.20-5:** LTS (same as the Project) because, for the reasons summarized above and in the context of the Project, Alternative 2 would not cumulatively impair an adopted emergency response plan or an emergency evacuation plan. **Impact 3.20-6:** LTS (same as the Project) because Alternative 2 would be developed on a subset of the Project site, and thus would be subject to the same site conditions that could affect the risk of exposure of people or structures to significant site condition–related risks. **Impact 3.20-7:** LTS (same as the Project) because, for the reasons summarized above and in the context of the Project, Alternative 2 would not make a cumulatively considerable contribution to any potentially significant cumulative wildfire impact, including the maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities).

NOTES:

CDFW = California Department of Fish and Wildlife; CEQA = California Environmental Quality Act; GHG = greenhouse gas; KOP = Key Observation Point; PG&E = Pacific Gas and Electric Company; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; PV = photovoltaic; Project = Cornucopia Hybrid Project; SJVAPCD = San Joaquin Valley Air Pollution Control District; USFWS = U.S. Fish and Wildlife Service; Williamson Act = California Land Conservation Act of 1965

* *Significance conclusions:* LTS = Less than Significant; LTSM = Less than Significant with Mitigation; SU = Significant and Unavoidable

SOURCE: Data compiled by Environmental Science Associates in 2024

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4.8 References

Amber Kinetics. 2018. *Amber Kinetics M32 Flywheel Installation & Maintenance Manual,* v2.0. March 2018.

Amber Kinetics. 2024. "Amber Kinetics M32: The Industry's Only Long-Duration Kinetic Energy Storage System (KESS)—Enabling Highly Efficient Industrial and Commercial Applications." Data sheet. Available: https://www.amberkinetics.com/wp-content/uploads/2020/05/Amber-Kinetics-DataSheet.pdf. Accessed October 26, 2024.

American Clean Power. 2024. Hydrogen Energy Storage. Available: https://cleanpower.org/facts/clean-energy-storage/hydrogen-energy-storage/. Accessed October 28, 2024.

Ayres, A., A. Rosser, E. Hanak, A. Escriva-Bou, D. Wheeles, M. De Leon, C. Seymour, and A. Hart. 2022. "Solar Energy and Groundwater in the San Joaquin Valley: How Policy Alignment Can Support the Regional Economy." Public Policy Institute of California. October 2022. Available: https://www.ppic.org/publication/solar-energy-and-groundwater-in-the-san-joaquin-valley/. Accessed October 26, 2024.

Beacon Power. 2024. "Beacon Power Flywheel Energy Storage Systems." Available: https://beaconpower.com/wp-content/themes/beaconpower/inc/beacon_power_brochure_081414.pdf. Accessed October 26, 2024.

California Division of Mines. 1958. *Salt in California*. Bulletin 175. San Francisco, CA. March 1958. Available: https://www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=8488. Accessed October 26, 2024.

CEC (California Energy Commission). 2019. *Flywheel Systems for Utility Scale Energy Storage: A Transformative Flywheel Project for Commercial Readiness*. Final Project Report. CEC-500-2019-012. January 2019. Available: https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2019-012.pdf. Accessed October 26, 2024.

Conzen, J., S. Lakshmipathy, A. Kapahi, S. Kraft, and M. DiDomizio. 2023. "Lithium Ion Battery Energy Storage Systems (BESS) Hazards." Abstract. *Journal of Loss Prevention in the Process Industries* 81, February 2023. Abstract available: https://www.sciencedirect.com/science/article/abs/pii/S095042302200208X?via%3Dihub. Accessed October 26, 2024.

DOC (California Department of Conservation). 2024a. Williamson Act Program Overview. Available: https://www.conservation.ca.gov/dlrp/wa/Pages/wa_overview.aspx. Accessed October 29, 2024.

DOC (California Department of Conservation). 2024b. Important Farmland Categories. Available: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx. Accessed September 22, 2024.

DOE (U.S. Department of Energy). 2014. *Final Environmental Assessment for the Pacific Gas and Electric Company (PG&E) Compressed Air Energy Storage (CAES) Compression Testing Phase Project, San Joaquin County, California*. DOE/EA-1752. National Energy Technology Laboratory, Morgantown, WV. May 2014.

DOE (U.S. Department of Energy). 2024. Perovskite Solar Cells. Available: https://www.energy.gov/eere/solar/perovskite-solar-cells. Accessed November 27, 2024.

Energy Link LLC. 2024. Everything You Need to Know About Hydrogen Energy Storage. Available: https://goenergylink.com/blog/hydrogen-energy-storage/. Last updated January 25, 2022. Accessed October 25, 2024.

Energy Sage. 2024. Bifacial Solar Panels: What You Need to Know. Available: https://www.energysage.com/solar/bifacial-solar-panels-what-you-need-to-know/. Last updated October 11, 2024. Accessed November 27, 2024.

Fresno County. 2018. "Notice of Preparation of a Draft Environmental Impact Report and Public Scoping Meeting for Coalinga Oil Field EIR No. 7180." Department of Public Works and Planning, Development Services and Capital Projects Division, Fresno, CA. June 27, 2018. Available: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/26639-coalinga_nop.pdf. Accessed November 4, 2024.

Fresno County. 2023. *Key Energy Storage Project Draft Environmental Impact Report*. EIR No. 8189, CUP No. 3734, State Clearinghouse No. 2022070414. Department of Public Works and Planning, Development Services and Capital Projects Division, Fresno, CA. Prepared by Environmental Science Associates, Inc., San Jose, CA. September 2023. Available: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports/eir-8189-key-energy-storage-project. Accessed October 26, 2024.

Fuel Cell & Hydrogen Energy Association. 2024. Hydrogen As Energy Storage. Available: https://www.fchea.org/hydrogen-as-storage. Accessed October 25, 2024.

Headley, A.J., and S. Schoenung. 2022. DOE ESHB, Chapter 11, "Hydrogen Energy Storage." Sandia National Laboratories. March 2022. Available: https://www.sandia.gov/app/uploads/sites/163/2022/03/ESHB_Ch11_Hydrogen_Headley.pdf. Accessed October 28, 2024.

Larson, A. 2021. "Want Long-Term Energy Storage? Look to Hydrogen." *Power,* December 1, 2021. Available: https://www.powermag.com/want-long-term-energy-storage-look-to-hydrogen/. Accessed October 28, 2024.

Mitsubishi Power Americas, Inc. 2024. Bold Moves for a Brighter Tomorrow: Collaborating to Reach Hydrogen's Full Potential. Available: https://power.mhi.com/regions/amer/success-stories/advanced-clean-energy-storage-project. Accessed October 28, 2024.

Nectr. 2024. How Does a Solar Panel Optimizer Work? Available: https://solar.nectr.com.au/blog/how-does-a-solar-panel-optimiser-work#:~:text=A%20solar%20panel%20optimiser%20uses,the%20string%20to%20operate%20normally. Accessed November 27, 2024.

NREL (National Renewable Energy Lab). 2020. Answer to Energy Storage Problem Could Be Hydrogen. June 25, 2020. Available: https://www.nrel.gov/news/program/2020/answer-to-energy-storage-problem-could-be-hydrogen.html. Accessed October 28, 2024.

PG&E (Pacific Gas and Electric Company). 2018. *Technical Feasibility of Compressed Air Energy Storage (CAES) Utilizing a Porous Rock Reservoir*. Report Number DOE-PGE-00198-1. Prepared for U.S. Department of Energy under Contract DOE-OE0000198, California Public Utilities Commission under Decision 10-01-025, and California Energy Commission under Grant Award PIR-12-001. March 2018. Available: https://www.osti.gov/servlets/purl/1434251. Accessed October 26, 2024.

Power Technology. 2021. PG&E-Compressed Air Energy Storage System, US. September 2, 2021. Available: https://www.power-technology.com/marketdata/pge-compressed-air-energy-storage-system-us/. Accessed October 26, 2024.

SG H2 Energy. 2024. "World's Largest Green Hydrogen Project to Launch in California." Press release. Available: https://www.sgh2energy.com/worlds-largest-green-hydrogen-project-to-launch-in-california. Accessed October 28, 2024.

Sierra Pacific Materials. 2024. Our Locations: Avenal. Available: http://www.sierrapacificmaterials.com/locations/avenal. Accessed November 4, 2024.

Singh, Suresh Kumar, Anita Gehlot, and Rupendra Pachauri. 2018. *An imperative role of sun trackers in photovoltaic technology: A review*. Renewable and Sustainable Energy Reviews, Volume 82, Part 3, Pages 3263-3278. Available: https://doi.org/10.1016/j.rser.2017.10.018. Accessed November 27, 2024.

SinoVoltaics. 2024. Anti Reflective Coating: Usage for Solar Panels. Available: https://sinovoltaics.com/learning-center/solar-cells/anti-reflective-coating-for-solar-panels/. Accessed November 27, 2024.

UC Berkeley School of Law (University of California, Berkeley, School of Law). 2016. "A Path Forward: Identifying Least-Conflict Solar PV Development in California's San Joaquin Valley." Center for Law, Energy and the Environment. May 2016. Available: https://www.law.berkeley.edu/wp-content/uploads/2016/05/A-PATH-FORWARD-May-2016.pdf. Accessed October 26, 2024.

USEPA (U.S. Environmental Protection Agency). 2023. *Re-Powering America's Land Initiative: Program Overview.* May 2023. Available: https://www.epa.gov/system/files/documents/2023-05/re_cl_program_overview_508_050223.pdf. Accessed October 28, 2024.

USEPA (U.S. Environmental Protection Agency). 2024a. Electricity Storage. Available: https://www.epa.gov/energy/electricity-storage. Last updated September 23, 2024. Accessed October 26, 2024.

USEPA (U.S. Environmental Protection Agency). 2024b. RE-Powering Mapper. Available: https://geopub.epa.gov/repoweringApp/?page=Page-1. Accessed October 28, 2024.

Westlands Water District. 2017. *Final Program Environmental Impact Report, Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan.* State Clearinghouse No. 2013031043. Fresno, CA. Prepared by Bert Verrips, AICP, Environmental Consulting, Santa Ana, CA. December 2017.

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CHAPTER 5
Other CEQA Considerations

5.1 Introduction

CEQA Guidelines §15126 requires an EIR to discuss certain topics that were not specifically discussed in previous EIR chapters. Accordingly, this chapter discusses the following topics:

(1) Significant environmental effects that cannot be avoided if the Project is implemented.

(2) Significant irreversible environmental changes that would result from implementation of the Project.

(3) Growth-inducing impacts of the Project.

5.2 Significant Unavoidable Impacts

Section 15126.2(a) 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. As analyzed in Chapter 3, *Environmental Analysis*, the Project would result in no significant unavoidable impacts.

5.3 Irreversible Changes

CEQA's requirement to analyze irretrievable commitments of resources applies only in the following limited circumstances: (1) the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency; (2) a local agency formation commission's adoption of a resolution making determinations; and (3) projects that require the preparation of an environmental impact statement under the National Environmental Policy Act of 1969 (Public Resources Code §21100.1; CEQA Guidelines §15127). Such an analysis is not required by CEQA for this Project.

5.4 Growth Inducement

Section 15126.2(e) of the CEQA Guidelines requires a discussion of the ways in which a project "could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas)." Project-caused population increases could tax existing community service facilities, requiring the construction of new facilities that could cause significant environmental effects.

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 a maximum of 350 on-site personnel during construction. It

is anticipated that this staff would reside in the cities and counties that fall within a 75-mile radius of the Project site, which are listed in Tables 3.15-1 and 3.15-2 and shown in Figure 3.15-1 in Section 3.15, *Population and Housing*.[1] The existing construction labor pool in Fresno County is sufficient for meeting Project needs.[2]

After construction, the Project would require six full-time personnel and would be remotely operated and monitored. Routine operations would require periodic visits to the facility site by up to 22 workers. It is anticipated that one annual major maintenance inspection would occur. Non-routine (emergency) maintenance could require additional workers. Additionally, two professionally trained sheepherders would be present on-site during grazing season.

Decommissioning and site restoration activities are expected to require a workforce similar to or smaller than the construction workforce; decommissioning and site restoration–related activities are expected to take approximately 10–12 months to complete according to the Project's reclamation plan. Because construction and decommissioning would be temporary, the Project is unlikely to cause substantial numbers of people to relocate to Fresno County. Therefore, this Project would not result in a large increase in employment levels that would substantially induce growth.

It is expected that construction workers who live outside of Fresno County 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 them without requiring new construction.[3] Therefore, the Project is not expected to induce population growth, the housing and provision of services for which could cause significant adverse environmental impacts.

The Project could have an indirect impact related to population growth if it were to generate growth or produce a concentration of people beyond what is assumed in local and regional land use plans, or what is assumed in projections made by regional planning authorities. The Project would result in an increase in available and reliable electrical capacity for the region. Therefore, an indirect increase in the population could result from the additional availability of electrical capacity to the region. However, other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have more direct effects on growth, so the overall indirect impact on population growth from the Project would be less than significant.

[1] Consistent with Items 12 and 14 of the County's Solar Facility Guidelines, the Applicant proposes to make reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce and to purchase products and equipment from Fresno County manufacturing facilities and/or vendors. For the purposes of this EIR, *local* means the 75-mile radius surrounding the Project site, which includes the cities and counties listed in Tables 3.15-1 and 3.15-2 and shown in Figure 3.15-1 in Section 3.15, *Population and Housing*.

[2] According to the California Employment Development Department's Labor Market Information Division, the unemployment rate in Fresno County was 7.3 percent in October 2024, up from 6.9 percent in September 2024. This is comparable to an unadjusted unemployment rate of 5.4 percent for California during the same period (EDD 2024).

[3] Among Fresno County's 349,217 total housing units in 2024, the California Department of Finance reported a vacancy rate of 5.6 percent (DOF 2024).

5.5 References

DOF (California Department of Finance). 2024. "E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2024." Available: https://dof.ca.gov/wp-content/uploads/sites/352/Forecasting/Demographics/Documents/E-5_2024_InternetVersion.xlsx. Accessed July 1, 2024.

EDD (California Employment Development Department). 2024. "Fresno Metropolitan Statistical Area (MSA) (Fresno County): Private Education and Health Services and Government Increased by 3,600 over the Year." News release. Available: https://labormarketinfo.edd.ca.gov/file/lfmonth/frsn$pds.pdf. Accessed November 25, 2024.

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CHAPTER 6
Report Preparation

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6.3 Entities Consulted and Recipients of the Draft EIR

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Federal Agencies

NAVFACSW Intergovernmental Branch

U.S. Army Corps of Engineers, Sacramento District

U.S. Department of Agriculture, Natural Resources Conservation Service

U.S. Department of Interior, Fish and Wildlife Service–Endangered Species Division

U.S. Environmental Protection Agency, Region 9

State Agencies

California Department of Conservation, Division of Land Resource Protection

California Department of Conservation, Geologic Energy Management Division

California Department of Fish and Wildlife, Region 4

California Department of Forestry and Fire Protection, Fresno-Kings Unit

California Department of Transportation, 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 Regional Water Quality Control Board, Region 5

California State Reclamation Board

San Joaquin Valley Air Pollution Control District
Southern San Joaquin Valley Archaeological Information Center
State Office of Historic Preservation, Department of Parks and Recreation
State Water Resources Control Board, Division of Drinking Water

Regional and Local Agencies

Central Valley Flood Protection Board
City of Avenal, Community Development Department
City of Coalinga, Community Development Department
City of Coalinga, Water Treatment & Distribution
City of Huron
City of Kerman, Community Development Department
City of Mendota, Planning and Community Development
City of San Joaquin
Coalinga-Huron Unified School District
Consolidated Mosquito Abatement District
Fresno Council of Governments
Fresno Metropolitan Flood Control District
James Irrigation District
Kings Basin Water Authority
Kings River Conservation District
Mendota Unified School District
Reef-Sunset Unified School District
Tranquillity Irrigation District
Tranquillity Resource Conservation District
Westlands Water District
Westlands Water District (Westside Subbasin Groundwater Sustainability Agency)
Westside Resources Conservation District

Native American Tribes

Dumna Wo Wah
Dumna Wo Wah Government
Picayune Rancheria of the Chukchansi Indians
Santa Rosa Rancheria Tachi Yokut Tribe
Table Mountain Rancheria

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